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Original Articles

DEFORMITIES OF THE VULVA FROM EARLY AND LATE INDURATING EDEMA.*

[ŒDEMA INDURATIVUM (SIGMUND); ŒDEMA SCLEROTICUM (PICK).]

ROBERT W. TAYLOR, M.D.

Consulting Genito-Urinary Surgeon to the Bellevue and Charity (City) Hospitals.

NEW YORK CITY.

I have many times been struck with the want of familiarity of physicians with the lesions of the vulva produced by the indurating edema of syphilis. As an example of this unfamiliarity and even ignorance, I may say that I have seen instances of this affection diagnosticated as cold abscess, traumatism, elephantiasis, lymphatic infiltration, anomalous varicocele, fibroma diffusum, lipoma, sarcoma and a local anasarca, tuberculosis and cancer. While in many instances doubt and uncertainty have been present in the minds of the observers of early cases of this affection, in the study of more advanced ones a number of surgeons and gynecologists whom I have seen had not the slightest conception of the nature of the lesions before them. It seems to me, therefore, that the time is ripe for an illuminating paper on this subject.

Then, again, little has been written and little is known of the outcome of these cases and many interesting and important facts have never been published.

In this essay I shall try to describe this affection clearly in all its conditions, and then to present the details of various sequelæ in a number of my cases. My observations were made over a long period of years, during which I had the good fortune to observe a goodly number of cases and in many instances to trace them in their career toward ultimate cure or permanent deformity. Most of the cases occurred in hospital and clinical practice, in women whom it was impossible to treat thoroughly or systematically for long uninterrupted periods; consequently in many of them full resolution of the syphilitic infiltration was not induced, and the affection ran a very chronic course.

CLINICAL HISTORY.

Indurating edema is in many cases a complication of the initial hard chancre, and then is an early lesion; but it may develop, owing to various causes, at later periods.

It is always an expression, however, of the continued activity of the syphilitic diathesis. In some exceptional cases the initial sclerosis occupies a whole labium and much enlarges it, while in most instances the lesion is limited in extent and only occupies a segment of the part.

In a limited number of cases we find that accompanying the initial lesion, either around it or in its vicinity, a hard edema of one labium or both labia occurs. This edema, which has been called sclerotic or indurating, is very peculiar and is the sole appanage of syphilis. It usually begins insidiously in an indolent aphlegmasic manner, without pain, and perhaps with no heat nor pruritus. It may become fully developed in from one, three, to many weeks. Then again, in some cases, its onset is quite brusque and rapid, and in a few days a labium may be greatly enlarged. When such a labium is examined it may be found to be of double, even quadruple, its normal size. Its tegumentary covering may be normal in color or a little redder than usual, even violaceous, while its mucous membrane is of a dull red. In some cases the corresponding labium minus may be affected, and its pinkish-red color is then somewhat increased. There is no evidence of pitting on pressure, inflammatory engorgement nor of acute edematous swelling. The parts, as a rule, are neither hot nor tender on pressure, nor spontaneously, but in some cases of gonorrheal or leucorrheal discharges, and owing to uncleanliness, ephemeral attacks of deep redness may be observed, which are probably due to staphylococcic or streptococcic inflammatory complications. In these cases there may be tenderness. The lesion at its acme is of an extreme hardness, sometimes presenting a dense elasticity, like the lobe of one's ear, and again a stony feel, like bone or cartilage. It may be that the whole labium or the labia (if both are involved) are thus uniformly sclerotic, or, as it often happens, there may seem to be a central kernel of great density surrounded by an atmosphere of elastic firmness. In uncleanly women, during pregnancy, and as a result of traumatism, this indurating edema may extend beyond the labial limits. Well-marked secondary symptoms are constant concomitants. This form of indurating edema, following a hard chancre, is very well shown in Figure 1. Its history is as follows:

CASE 1.—A woman, aged 26, had a hard chancre on the left of the fourchette which lasted two months. Before it finally disappeared she noticed that the left labium majus slowly and painlessly swelled. As this enlargement was going on, an erythematous and papular eruption appeared over the body. These lesions were abundant about the genitalia, and they are indicated in the dark spots scattered over the parts in the figure. By means of active treatment, general and local, the swelling of the labium was dissipated in about three months. After that the woman continued antisyphilitic treatment for nearly a year, and then thought herself well. About two years after her infection she observed that the labia minora became larger and were pushed out between the external parts. She at that time had seen no evidence of syphilis for more than a year. The hypertrophy of the nymphæ went on slowly, and in eight months they presented the appearances seen in Figure 2. They are of many times their normal size, of very firm elastic consistence, of a deep pinkish hue. The patient then showed no perceptible evidence of syphilis, and the ganglia, which in the early stages had been markedly enlarged, were scarcely to be felt. Under treatment resolution occurred.

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

The next form of indurating edema is well shown in the following case (Fig. 3):

CASE 2.—A woman, aged 24, had a small and ephemeral initial lesion at the base of the left labium minus. After it had healed she noticed that her genitals became redder than normal, particularly on the left side. At the regular evolution of secondary manifestations a linear series of condylomata lata showed themselves on the inner surface of the left labium majus. As these grew in size and age, she noticed that the corresponding large lip gradually and painlessly grew larger until it became several times the size of its fellow. No heat nor sensitiveness were observed, but a condensed, unyielding labium was present, which protruded markedly downward and outward, presenting great deformity. The outlines of the superimposed condylomata are well shown in the figure.

This case, therefore, shows in an admirable manner indurating edema accompanying secondary lesions—a form which is rather uncommon.

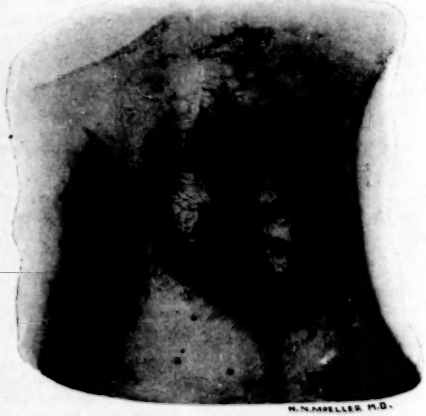


Fig. 1.—Indurating edema of left labium majus.

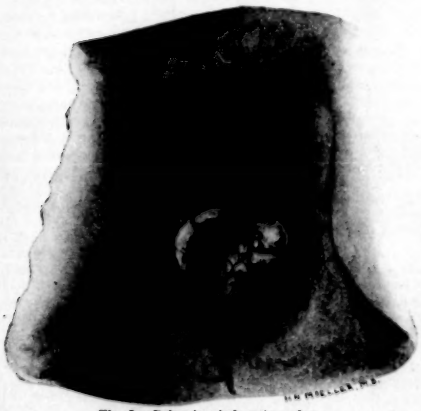


Fig. 2.—Relapsing indurating edema.

Fig. 3.—Indurating edema complicating condylomata lata.

Though indurating edema is more commonly seen in the primary and early secondary stages of syphilis, it may occur, as before stated, later in the disease—namely, in the first, second and third years, and even beyond these periods. While the indurating edema of the primary and secondary stages of the disease usually accompanies or follows the active lesions, that of the later periods

Fig. 4.—Late indurating edema.

Fig. 5.—Late indurating edema.

may be unaccompanied by any previous or present syphilomata. Though, however, late edema may not be a complication of various late syphilitic processes, it very often seems to be developed by vaginal or vulvar irritation, and also by traumatism. I have seen cases in which irritated herpes and chronic chancroids have been the starting point of indurating edema.

The later form of indurating edema is portrayed in an admirable manner by Case 3, from which Figures 4 and 5 were taken.

Case 3.—A woman, aged 25, syphilitic three years, had received little if any proper treatment, and in the third year of her disease she still presented a fading papular eruption and generalized adenopathies. Six months before admission to hospital she was kicked in the genitals by her husband. After the injury had subsided she noticed that her nymphæ gradually and painlessly grew large, until they presented the appearances shown in Figures 4 and 5. The left labium minus was markedly swollen, and looked as if it contained a testis in its substance, while the right one was irregularly and less enlarged. The color of these morbid nymphæ was a deep and slightly purplish red. In consistence the left one was as hard as cartilage, while the right one was firm and elastic. The inner surface of these indurated labia is shown in Figure 4 to be nodulated and papillated, the hardening process ended abruptly at the bases of the nymphæ. The internal and local use of mercury caused slight softening in the induration.

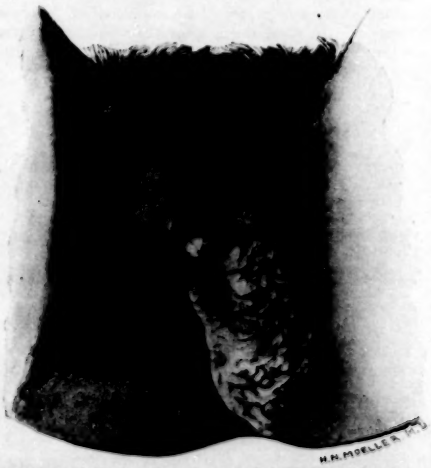


Fig. 6.—Indurating edema with papillomatous complication.

Fig. 7.—Atrophic sequelæ of indurating edema.

In this case the indurating edema had its origin in the bruise of the nymphæ, the woman being in the active power of the syphilitic diathesis. It is probable that a vaginal discharge may have been a moderately accessory factor. The bruise itself became swollen and painful, and from its site the sclerosing process spread downward.

This form of indurating edema is much less common that the earlier forms, and it may also be seen on the lips of both sexes and on the prepuce of men. Typical syphilitic inguinal adenopathy is observed as a rule in these cases.

A striking case of late indurating edema is portrayed in Figure 6.

Case 4.—A negress, aged 30, became infected, and the edema began in the fourth year of the disease. The right labium majus was moderately enlarged, while the left assumed elephantine proportions. The affection developed slowly and painlessly, reaching its acme in about six months. In consistence the new growth was typical; it was exceptional, however, in the fact that the integument was covered with large and small warty and papillomatous excrescences. I removed the greater part of the left labial tumor; the parts promptly healed and, strange to say, very little deformity resulted. Examination clearly showed that the tissue of the new growth was composed of indurating edema. A number of surgeons looked on this growth as cancerous, notwithstanding the youth of the woman, while one thought it was an example of elephantiasis.

Fig. 8.—Epithelioma of vulva following old syphilis.

Many cases occur in which the edema is of limited extent. I have seen several of these cases in which the tumors were as large as a man's fist. Between the small masses and the very large ones there are many intermediate sizes. Uninfluenced by treatment, the lesion runs a long and usually uneventful course. In general it may be said that if the diagnosis is made early and energetic internal and local treatment is adopted and pushed, resolution of the infiltration may be induced. Some cases, however, prove refractory. It is well to remember that if the growth is very large, and if it fails to be influenced by active therapy, it is futile to delay too long. Then the best course is surgical removal, care being taken to preserve as far as possible the symmetry of the parts.

Fig. 9.—Chronic hyperplasia of vulva and perineal region from late syphilis. Further development of such cases are termed by some authors elephantiasis.

It is very uncommon to observe spontaneous involution in indurating edema in women's genitals when the swellings have reached a very large size. Small lesions may in time undergo resorption. In the early months much can be done. I have several times been much surprised to observe partial resorption in moderate sized tumors some months after the cessation of vigorous treatment. In some cases, after the resolution of the swelling as a result of treatment, atrophic and degenerative changes took place in the labia and nymphæ.

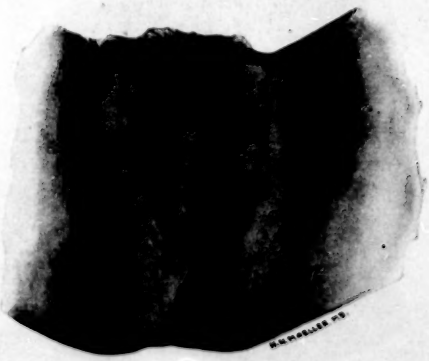


Fig. 10.—Phagedena of genitals of female following indurating edema and ulceration.

SEQUELÆ.

The sequelæ which I have observed after the lesions are a general atrophy, with deformity; a condition similar to those of kraurosis vulvæ, epithelioma, chronic cellular hyperplasia, elephantiasis, gangrene and phagedena.

It is well to emphasize the fact that in most cases when diagnosticated early, and when promptly treated, a cure can be promised. It is the chronic untreated and badly treated cases which result in endless discomfort, misery and deformity.

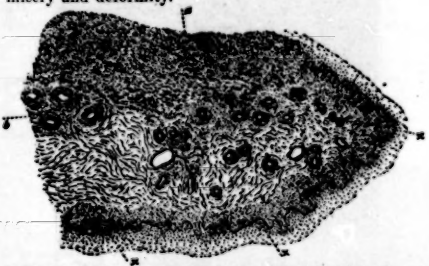


Fig. 11.—Section of preputial chancre. The indurating edema is shown by a distension and infiltration of the upper layers of the derma, shown in the zone *x, x, x*, about the center of the chancre at *a*. The infiltration of the wall of the vessels is clearly shown, especially at *b*.

the indurating edema also involved the perianal region, which underwent great atrophy. The result was chaotic distortion of the parts. The morbid process was not accompanied by ulceration until the atrophic changes had become very chronic. This new factor added much to the ultimate disfigurement.

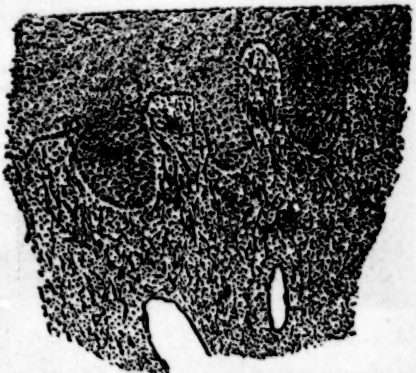


Fig. 12.—Same section as in Fig. 11 more highly magnified. The inter-fibrillary spaces of the upper layer of the derma are distended with fluid and small round cells.

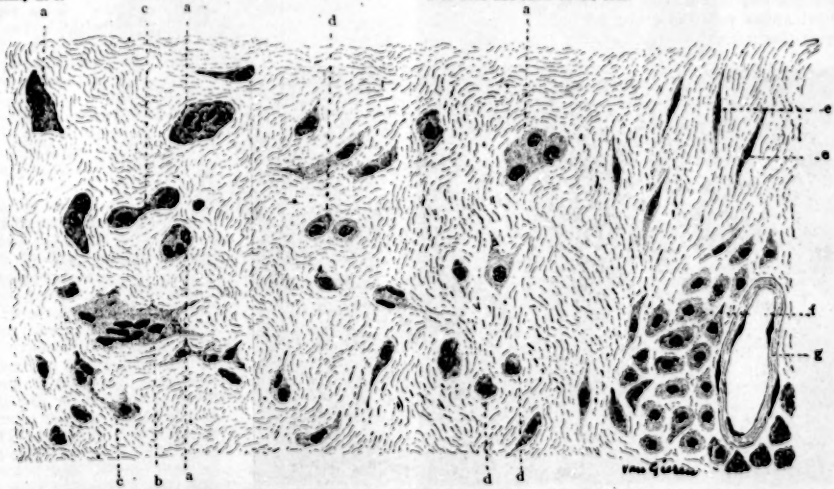


FIG. 13.—Section of a cellular hyperplastic patch following syphilis of the vulva; *a, a, a*, stages in the formation of a giant cell, *b*; *c, c*, connective tissue cells apparently in stages of division and proliferation; *d, d, d*, plasma cells; *e, e*, young fibroblasts developed from the proliferating connective tissue cells; *f*, a group of small polyhedral cells which, to a large extent, are plasma cells, and possibly to some extent are swollen small lymphocytes distending the lymph space; *g*, a small vein (Zeiss 1/12, oil immersion, ocular, 4).

In Figure 7 are depicted the external genitals of a woman, 50 years old, who had chronic indurating edema. During five years the process of obliterating atrophy went on until the appearances here shown were observed. It will be seen that the topography of the parts is no longer recognizable; the larger labia have been destroyed and the remnant of the right lesser one alone remains. The vestibule and fourchette are absent. In this case

In many cases, chiefly in uncleanly, dissipated women with vaginal discharges, ulceration is observed in various degrees as a result. It may be superficial, or it may lead to sinuses which perforate the urethra, bladder, vagina and rectum, and even burrow and open by fistulous tracts about the buttocks and thighs. In these bad cases phagedena and gangrene may later on supervene.

(*Concluded on page 105.*)

THE RELATIONS OF THE DENTAL ARCHES TO PATHOLOGIC AFFECTIONS OF THE NASOPHARYNX AND ADJACENT PARTS.*

E. A. BOGUE, D.D.S., M.D.
NEW YORK CITY.

It is singular that a science or an art may progress for centuries on the borderland of important discoveries and fail of making them.

Adenoids were discovered only a little more than fifty years ago. The proper, normal arrangement of human dental arches was discovered less than twenty-five years ago. The intimate relation between these two discoveries has just begun to be understood. Until normal dental arches were discovered we did not know what proper mastication was nor the conditions necessary to its performance. These conditions comprise the full set of adult teeth standing in proper relations to each other.

Fig. 1.—Normal dental arches showing the articulation of the teeth when in correct occlusion.

Fig. 5.—Showing result of the withdrawal of the tongue of a mouth breather from its place in the roof of the mouth, confining its action to the mandible.

Figs. 6 and 7.—Two skulls with apparently perfect dental arches; 6 is according to measurements; 7 is too narrow. The nasal fossæ in 6 are ample; in 7 they seem insufficient; 6 must have been the skull of a vigorous person with a resonant voice, who lived to middle age, at least; 7 belonged to an individual who was frail and delicate and who died before reaching twenty years of age.

Now that we know something about the proper size and relations of the dental arches, we know how mastication should be performed to get the greatest degree of vigor from the food we consume, and we know what steps should be taken to permit the child afflicted with adenoids to close its mouth.

Dr. I. B. Davenport of Paris discovered in 1886 what normal dental arches were; also that in civilized communities normal dental arches were rare. A few years afterward the late Dr. Bonwill of Philadelphia discovered that a mathematical relation existed between the width of the permanent upper central and lateral incisors and cuspid and the entire arch, and from the measurements of these three teeth he was able to construct the entire arch as it should be when normal (Fig. 1).

When thus normally arranged, it is found that all the teeth growing in one jaw articulate with the teeth of the other jaw so as to furnish the largest area of grinding surface. The cusps and the sides of the cusps, and the sulci into which they fit, all combine to furnish not only the best masticating surfaces, but to form dental arches that for strength and durability can not in the human species be excelled. The cusps of all the grinding teeth in such arches, interlocking with their antagonists, prevent any variation in position of any of the teeth either laterally or anteroposteriorly.

Dr. Hawley of Columbus, Ohio, recognizing these facts, adapted Dr. Bonwill's discovery to the use of the orthodontist. The result is that to-day by measuring the width of one upper central incisor we may determine approximately the shape and size of the arch in which that tooth belongs, and may draw it on paper so accurately that we may work to that arch with confidence.

* Read in the Section on Diseases of Children at the Fifty-eighth Annual Session of the American Medical Association, June, 1907. Some of the illustrations and part of the text have been omitted, but the article will appear in full in the reprints and in the Transactions of the Section.

If there is any slight variation in the sizes of the various teeth in the same mouth, and we work up to the model, Nature will make all proper correction in the way of diminution and adjustment to type without assistance, and at the same time without any injury to size or strength or the adaptation of the arches to each other (Figs. 6 and 7).

When, therefore, irregular teeth and narrow dental arches are found, with the characteristic physiognomy that we all recognize as associated with adenoids, we expect in nearly all cases to find not only nasal stenosis, but that the irregularity of the teeth is in proportion to the degree of deflection in the nasal septum and diminution in the nasal passages.

Having had this idea impressed by clinical experiences, I went in March, 1905, to the Smithsonian Institution at Washington and spent a week examining skulls, mostly aborigines, together with a number of children's skulls of mixed origin. I carefully examined all of the children's skulls, and as many of the adult ones containing fairly good sets of teeth, as I could master in that length of time. In all the skulls that I examined a pronounced deflection in the nasal septum was invariably accompanied by an irregularity of the dental arches, greater or less according to the deflection of the septum.

I had not time to examine carefully with the necessary measurements as to whether the height of the palatal arch bore in all cases a direct relation to the irregularity of the teeth, and, therefore, consequently to the straightness of the nasal septum. In a number of cases, however, I felt sure that this was the case. I think that a high V-shaped arch of the palate becomes lower by spreading slowly the arch of the upper teeth laterally to their correct normal positions. In a growing child, however, the ordinary arch may become higher from spreading, but from the limited length of time in which these cases have been under observation no more positive statement can yet be made.

As I have learned to look on the etiology of lymphoid growths as being generally identical with that of more or less narrow dental arches, I shall associate the two affections in our consideration.

I want to show that if taken early, say at about the sixth or possibly the seventh year, the correction of irregularities in the positions of the temporary teeth corrects impending irregularities in the permanent teeth. That process results not only in an enlargement of the dental arch, but, so far as is now known, in a straightening of the nasal septum by spreading the upper maxillary arch, gaining a consequent enlargement of the nasal passages and incidentally of all the adjacent bones of the face, nose and head.

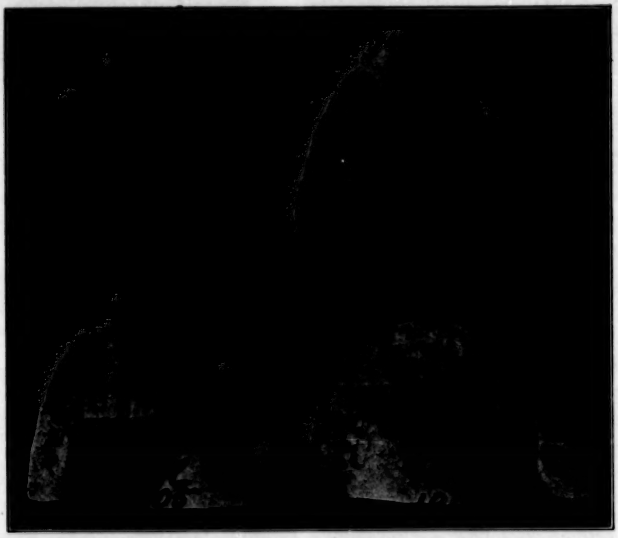


Fig. 9.—Four models of the same mouth showing scarcely any lateral growth for three years and a lateral enlargement of 1 cm. in seven months after an expansion arch had been adjusted.

I want to show, too, that the diagnosis of impending irregularities in and among the permanent teeth is almost as clear at six years of age or earlier, while the temporary teeth are still in the mouth, as at twelve when the permanent teeth are visible.

I wish to show that operations for rectifying the conditions above mentioned are more safely performed, with less pain, with apparently less general disturbance to the nervous system and more quickly than at any later period in life.

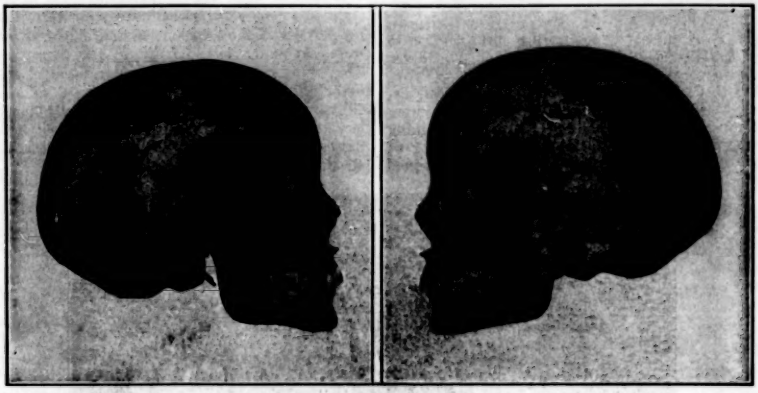
These operations, performed thus early, are more likely to remain permanently successful than if done at a later period, and that they have an influence which we can but little appreciate on the permanent well-being of the individual in after life. Vocalization, enunciation, mastication and breathing are brought nearer to

perfection than they could otherwise be, and the personal appearance is much improved.

It seems to me that in many, if not most, of the cases of contracted arches and adenoids, influences that came into operation after birth, and which we can understand much better than we understand heredity, are largely responsible for these conditions.

The statement that the tongue within, and the cheeks and lips without, are the main instrumentalities in the formation of the dental arches from the early stages of embryonic life, right on until maturity, is not by any means new; yet few practitioners realize the muscular and mechanical power of the tongue.

A few days since I undertook to prevent a lad of ten years from placing his tongue over a tooth that I wished to examine. Three fingers and my thumb holding a mouth mirror were unable to control its movements. This muscular organ, when the mouth is closed, lies against the roof of the mouth, and as it grows its lateral enlargement presses the dental arches outward, and so enlarges the upper jaw to its proper size, as well as the lower jaw or mandible against, which it is always pressing (Fig. 8). Inflammatory conditions, coupled with this withdrawal of the tongue, inevitably arrest the development of these parts. The cysts of the permanent teeth remain bunched in their insufficient spaces, and year after year goes by with scarcely any perceptible variation in the width of the upper jaw (Fig. 9). The attending physician may advise an operation. But usually, long before the mother consents to surgical interference, the arrest in development of the jaw, nose and adjacent parts has been established.



Figs. 12 and 13.—Two sides of the same skull. Articulation incorrect on one side (Fig. 12) and correct on the other (Fig. 13).

The constant breathing through the mouth, the dragging influence of the muscles of the jaws and cheeks, all combine to keep the arch of the jaw narrow and to prevent the healthy normal flow of lymph. But worst of all, this mouth-breathing causes the withdrawal of the muscular and pushing tongue from its place in the roof of the mouth, where by the growth and constant pressure of that tongue the lateral growth of the upper jaw is promoted.

This withdrawal of the tongue not only allows the arch of the jaw to remain narrow, but it causes the eruptive force of the teeth to be expended in an antero-

Fig. 14.—Showing progress made in about four months by a patient. Appearance of patient at time of applying apparatus, Oct. 27, 1906.

Fig. 15.—Same patient as shown in Fig. 14 after wearing apparatus. Taken Feb. 22, 1907.

posterior direction. From the time mouth-breathing is established, lateral growth is almost excluded till relief is afforded by surgical means. Surgical interference will, of course, generally be considered necessary, and might mean either an operation on the adenoids, or the faucial tonsils, or both, or the relief afforded by orthodontia, or all three.

If orthodontia is resorted to, either before or after operation for adenoids, and the operation can be begun about the sixth year, the crypts of the upper bicuspid teeth will at that age be lying embraced by the three roots of the deciduous molars, and will themselves have no roots.

When, therefore, the deciduous molars are moved into the positions they ought to occupy they carry with them these crypts of the permanent teeth, which, after the deciduous teeth have fallen out, develop their own roots in the positions to which they have been transported and become rooted there. No injury has been inflicted on the permanent teeth by the appliances used in orthodontia and the retaining appliances, being attached to the deciduous teeth, fall off when these teeth are lost, having fulfilled their function of retaining in position the teeth that have been moved until they have become firmly established.

The operation on tonsils or adenoids alone is not always successful in restoring nasal breathing. Just recently a lad of about eight years of age, who had been operated on twice for adenoids, still continued to breathe through the mouth until an expansion arch was placed on his teeth, when in a few weeks, without his attention having been called to it, he voluntarily closed his mouth and began breathing through his nose even in sleep.

While the adenoid operation in cases of narrow arches is not always successful in restoring nasal breathing, it is never successful in restoring the harmony of the features, the power of correct articulation, or the power of thorough and normal mastication. This requires a special operation, an expansion laterally of one or both dental arches, and a bringing into articulation and—so far as possible—into regularity all malarticulated teeth.

This process, as already stated, when undertaken at a very early age, tends toward a normal enlargement and development, not only of the upper jaw and the nasal passages, but of the other bones lying above the upper maxillary, thus ensuring greater regularity in size and position of the antra and all the other sinuses of the face (Fig. 11).

The early diagnosis of cases of irregularity is readily made if one carefully notices the articulation of the deciduous molars (Figs. 12 and 13). In normal cases the articulation is always correct; that is, the anterior cusp of the lower second deciduous molar articulates forward of the corresponding deciduous molar above, and the upper molar is astride the buccal row of cusps of the lower molars.

Whenever these upper and lower deciduous molars articulate in any other way than this, there is sure to be irregularity in the permanent teeth if they are allowed to develop without interference. The reason for this is, as has already been shown, that the crown of the permanent tooth is embraced by the roots of the deciduous molar.

If the first permanent molars, which erupt immediately posterior to and in contact with the second deciduous molars, are not properly articulated, it will be impossible that the other grinding teeth should be. If the upper arch is abnormally small, we may be certain that there will not be room for the anterior permanent teeth unless an enlargement of the arch is resorted to.

If such enlargement takes place sufficiently early for the roots of the permanent teeth to be formed after their crowns shall have been drawn into correct positions, there will never be irregularities in the positions of these teeth, and it follows, of course, that they will stay where they belong.

The articulation of regularly arranged permanent teeth, when all the members of the arches are present, is such that nothing short of a fracturing force can dislocate them. The regularity of the teeth in normal arches is also one of the chief factors in their resistance to decay, for the teeth are then in position, if they are properly formed, to be practically self-cleansing, if the food taken in is of the right sort and is thoroughly masticated.

Dental decay always comes from agencies external to the teeth; so if they can be kept clean automatically or otherwise, there will be no decay. Defects in formation, of course, preclude the possibility of automatic cleansing.

DEFORMITIES OF THE VULVA FROM EARLY AND LATE INDURATING EDEMA.

ROBERT W. TAYLOR, M.D.

NEW YORK CITY.

(*Concluded from page 101.*)

KRAUROSIS-LIKE CONDITION.

In the early days of the previous case there were appearances which suggested that form of atrophy called kraurosis vulvæ. Now it is generally admitted that this affection begins in a quasi-inflammatory manner, with pain and pruritus and hyperemia of the mucous membrane, localized at first at the clitoris and urethral orifice, and from there extending in a serpiginous manner over the whole vulva. Very soon hyperplastic and atrophic changes set in. In one of my cases coincident with the subsidence of the infiltration, atrophy gradually developed and persistently progressed. In two years the large and small labia had nearly disappeared, and looked like atrophic tissue covered with membrane which resembled cracked or crumpled parchment of a dirty brown color. The structure of the mucosa was entirely obliterated. The vulva no longer protruded; the clitoris was obliterated; and the parts around the urethra and vagina were stenosed by a leucoplakia-like tissue, which was shriveled and shrunken.

These conditions certainly were kraurotic; indeed, from my studies I am led to believe that kraurosis vulvæ is not an affection *sui generis*, but that it develops from a number of conditions—vaginitis, vulvitis, vaginal discharges and uterine disorders. In my cases the kraurotic conditions were only remotely connected with syphilis.

LEUCOPLAKIA AND EPITHELIOMA.

Another case of mine was that of a woman, 54 years old, in whom indurating edema of the vulva went on to atrophy, with the peculiar parchment-like wrinkle of the tissues. In the vulvar sulcus a leucoplakic condition developed and lasted for several years, when epithelioma developed and in two years the growth reached the size depicted in Figure 8. In this case the early symptomatology was largely that of kraurosis vulvæ. Following the atrophy, hyperplasia of the epithelium of the vulva

developed, and later on epitheliomatous degeneration set in and ultimately killed the patient. This is the only instance in which I have seen this complication follow indurating edema.

CLINICAL HYPERPLASIA OF VULVA AND ELEPHANTIASIS. CASES.

A very constant sequela of indurating edema of the vulva is simple chronic hyperplasia of the tissues (which also may result from specific ulcers). This condition is yet ill understood. It was first described by me in 1890. As a result of the involution of the specific edema the parts may become hypertrophic and more or less deformed. In these cases the chronicity of the low grade of inflammatory process seems to engraft on the tissues involved a hyperplastic tendency which thickens and more or less distorts them. The appearance in some cases is that of simple enlargements of the natural parts, but in the majority of cases there is more or less deformity and even distortion. No clear description can be given of the various cases, since the configuration of the vulva is subject to such great variation in women. In some the labia majora are large, in others small and exceptionally absent. The labia minora are seen in an infinite number of sizes and shapes. With the thickening of the parts there is redness, mild or severe. The chronicity, even inveterate course, of these vulvar lesions is due to the structural peculiarities of the parts, to their excessive vascular and nervous supply, and to the conditions to which they are so constantly subjected, and to their dependent position compressed between the thighs. Except in the mouth and lips (and that very rarely), we do not see such persistent and deforming low grade inflammation and hyperplasia. This process is a form of inflammation with the production of new connective tissue, in which congestion and exudative products are almost, if not entirely, absent. It is really a chronic productive or chronic cellular inflammation. This lesion in mucous membranes and transitional cutaneous mucous membranes produces a new growth of connective tissue in the stroma, occurring diffusely or in the form of nodular and polypoid outgrowths. The changes are of slow growth and of great chronicity. This chronic hyperplasia of the vulva may lead to much deformity. In Figure 9 the genitals of an old syphilitic woman are well shown. It will be seen that the vulva and perineum are covered with nodular masses which have greatly disfigured the genitalia. The morbid tissues are firm and unyielding to pressure and of a deep red color. In these cases ulceration is common in the interstices between the neoplasms. This case was in reality one of hyperplastic elephantiastic hypertrophy. Its pathology, however, is very different (see below) from that of elephantiasis nostras, in which there is a mixture of lymphangitis, vascular hyperplasia and connective tissue hypertrophy, together with more or less chronic edema. The hyperplasia in old syphilitics is microscopically the same as that of non-syphilitics, and can not in any sense be considered an essential evidence of the disease.

PHAGEDENA AND GANGRENE.

Phagedena and gangrene may exceptionally occur in old women whose vulvæ have been the seat of late hypertrophic, ulcerating and infiltrating lesions. Following the metamorphosis of indurating edema these destructive changes sometimes develop, and as a result great loss of tissue is produced. In Figure 10 the ravages of phagedena are well shown. In some cases death ultimately follows these morbid conditions, but in some women healing may occur, usually with much deformity.

It may be well to remark that gummatous infiltration into the mucosa of the female genitals, as well as nodular masses in the connective tissues of the parts, may undergo ulceration and lead to much deformity and even distortion. I have seen one case of indurating edema of the vulva that was followed three years later by elephantiasis of the prepuce of the clitoris and of the labia minora. I was unable to settle the question in my mind as to whether the new growth resulted from early syphilis, or whether it was the result of chronic masturbation.

It is well to remember that indurating edema is sometimes seen in men, beginning in a chancre and involving the integument of the penis and perhaps the scrotum, and even contiguous parts, *i. e.*, thighs and abdomen. In men also degenerative changes may occur and produce more or less deformity.

PATHOLOGY OF CHANCRE AND INDURATING EDEMA.

In the primary lesion, or chancre, there is a small round-celled infiltration of the connective tissue, proliferation of the connective-tissue cells, and an abundance of leucocytes, with more or less necrosis or degeneration of its constituent cells. An uncomplicated chancre in its early stages is identical in its general structure with a small superficial ulcer or patch of granulation, except that in the chancre there is distinctly more necrosis and degeneration of its constituent small spheroidal cells.

The blood vessels surrounding the chancre, as well as those a considerable distance from the chancre, even in its earliest stages of development, are uniformly changed: the endothelial cells are swollen or proliferating; the walls of the vessels are infiltrated, and the perivascular spaces are crowded with proliferating polyhedral cells.

This early and extensive lesion of the lymph-spaces about the blood vessels, especially the smaller veins, enables us to understand more definitely how the virus of syphilis spreads, how it travels along these lymph-spaces, accompanying the vessels to the root of the penis, to the first set of lymph-nodes which such a set of perivascular lymphatics communicate with—namely, the inguinal ganglia. From these inguinal nodes the cell proliferation, in response to the syphilitic virus, is propagated, it would seem to the lymph-nodes in general throughout the body in greater or less extent, and in this way the general adenopathy is established.

This extension of syphilis through the perivascular spaces from the primary sore to the inguinal glands occurs very early and proceeds with great rapidity. As soon as the chancre appears the network of peripheral perivascular lymph-spaces is already involved, and, as indicated by the line of proliferating cells along the venous lymph-spaces, the virus is already on the path to the inguinal lymph-nodes.

The stage of *induration* or *indurating edema* can now be considered. If a chancre at the well-pronounced stage of induration be examined microscopically (Fig. 11), it will be seen that the semi-necrotic mass of small spheroidal cells composing the bed and main bulk of the ulcer is circumvallated by a zone of edema and cellular infiltration of the papillary portion of the derma (Fig. 11, *x*, *x*, *x*). Indurating edema, then, as the name implies, is really a wall about the chancre wherein the

interfibrillary spaces of the pars papillaris are distended with fluid and small round cells (Figs. 11 and 12).

To recapitulate briefly the series of changes in a chancre: When the causal agent of syphilis enters through the skin or mucous membrane, it excites local leucocytosis and exudative inflammation, with more or less necrosis; there are also proliferation of the connective tissue cells, a propagation of proliferating cells along the perivascular lymph-spaces, and later a wall of infiltration and edema of the upper corium layers formed about the periphery of the ulcer corresponding to the stage of indurating edema.

In the light of these studies it is easy to understand cases of early indurating edema symptomatic of active primary or early secondary infection. The cases which puzzle us are those in which traumatism and various phlegmasia of the genitals seem again to set up this sclerosing process. The pathogenesis of these later cases is yet to be worked out.

PATHOLOGY OF CHRONIC HYPERPLASIA OF THE VULVA.

In chronic hyperplasia of the vulva, as the name implies, there is also a productive inflammation, a development of new connective tissue through the agency of the connective-tissue cells of the derma. The connective tissue cells proliferate and, lengthening out, become fibroblasts; the fibroblasts in turn are slowly converted into new fibrils of the derma, so with each division and focus of connective tissue proliferation the ground is laid for a future addition to the fibrillar substance of the derma. The process is exceedingly slow, and takes place by small increments; that is, groups of connective tissue cells in certain portions of the vulvar regions proliferate and become the forerunners of new connective-tissue fibers. This may go on simultaneously over quite an extent of the vulvar region, and in the course of time produce more or less evenly a hyperplasia about the pudendum, or it may be limited and accentuated in some one particular spot and give rise to localized fleshy tabs, excrescences and nodules. Between the two sets and forms of this activity of the dermal cells and their combinations are such a variety of intermediate gradations as to well merit the characterization of protean. But this should give rise to no confusion or temptation to classify them into different diseased processes, since however great the external configuration and apparent differences in their aspect, the underlying process is one and the same.

As a particular illustration of this process of chronic cellular inflammation of the derma Figure 13 may be consulted. This shows nearly all of the phases of connective tissue cell proliferation. And it also shows the participation of plasma cells, and possibly small lymphocytes, especially in a lymph crevice about a small vein. The obscure origin and differences of these latter cells do not concern us, as their destiny is much the same for all—the increase of connection in the derma, namely, hyperplasia.

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DISCUSSION.

DR. JOSEPH ZEISLER, Chicago, stated that what little he has seen of kraurosis vulvæ did not suggest at all a hyperplastic condition such as Dr. Taylor described. Kraurosis seems to him to be more closely allied to atrophy, and apparently has no clinical relationship to the condition described in the paper.

DR. WILLIAM A. PUSEY, Chicago, said that in the last year he has been able to study two cases of kraurosis vulvæ in elderly women, each with a history of long-standing, superficial atrophy of the labia, with patches of leucoplakia of the mucous membrane, such as are seen in the mouth. In both of these epitheliomata had developed on the leucomatous patches. Dr. Pusey has never seen any atrophic conditions of the vulva that were the result of previous hyperplasia, but he can readily see how some of the cases might have that etiology.

DR. WILLIAM S. GOTTHEIL, New York City, declared that in the City Hospital in New York more of these cases are seen than in most institutions in this country. He has seen some cases that were hypertrophic and others that were atrophic followed by sclerotic lesions, such as Dr. Taylor described. He thinks that the processes are identical. Connective tissue hyperplasia in the later stages shrinks and becomes atrophic. The photomicrograph which Dr. Taylor exhibited showed a very late stage of an intense inflammatory process, such as might follow sclerotic or ulcerative processes of various kinds.

DR. R. W. TAYLOR, New York City, in answer to a question by Dr. Baum, stated that the disease, as he saw it, was a sequel of syphilis, and of syphilis alone. In his cases the extension of the edema was coincident with the hard chancre. In some cases of progressive syphilis, in which the diathesis is still active, the edema sometimes occurs from simple lesions, sometimes from condylomata lata or from the hyperplasia set up by staphylococcic irritation following vaginal discharges. Dr. Taylor recalled the fact that his paper was divided into two parts: The first dealing with hyperplasia and the second with its sequelæ. He does not claim that the cases reported were cases of kraurosis, but that they resemble that condition. Case No. 7, he declared, was one of the most typical he has ever seen, the patient's vulva resembling a rubber tobacco pouch. All these cases occurred in his service at the Charity Hospital, many years ago, and were carefully observed for a long time. In every case sections were removed and submitted to Dr. Ira Van Giesen for microscopic examination, and his findings were verified by Drs. Prudden and Delafield.

LIGATION OF THE COMMON CAROTID ARTERY FOR MALIGNANT RECURRENT HEMORRHAGE OF THE VITREOUS.*

GEORGE S. DERBY, M.D.
Ophthalmic Surgeon, Carney Hospital.
BOSTON.

The object of this communication is to bring before this Section the subject of ligation of the carotid for the relief of a disease other than the vascular tumors of the orbit and lid in which this procedure is commonly employed. I refer to the rather infrequent cases of malignant, recurring vitreous hemorrhage.

The following example came under my observation a little over a year ago:

Patient.—B. K., 51, a healthy married woman of German birth.

History.—On the morning of Jan. 18, 1906, the patient noticed that the vision of her left eye was somewhat blurred. On the following day she applied for treatment at the Carney Hospital. Her family and previous history were negative. There was no evidence of hemophilia or of syphilis. There had never, to her knowledge, been any disease in her family and, as far as she knew, her eyes had always been normal. She had given birth to seven healthy children and her menses, always normal in character, had ceased four years previously.

Examination.—For the sake of brevity I will say here that several physical examinations made by members of the medical staff, at this time and during the succeeding year, were all absolutely negative. The heart and kidneys appeared entirely normal and there was no evidence of vascular disease. The

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blood pressure (Riva-Rocci) equalled 145 mm. The blood contained 5,568,000 red cells, 9,600 white, and 85 per cent. of hemoglobin. The patient was a stolid, well nourished woman with a good appetite and digestion.

Ocular Examination.—The left eye was white, cornea, iris and lens normal, the pupil slightly dilated. The vitreous contained numerous small and large floating opacities. Situated about in the optic axis and best seen with a plus 12 glass was a peculiar membranous looking structure roughly square in outline, and suggesting an inverted pyramid in shape (base forward) rather than a flat septum. In color it was white, with irregular areas of black pigment along its borders, and on its surface were large splashes of fresh blood. Along the lower temporal border was a small hemorrhage extending into the vitreous. The retina and nerve head could not be seen. Vision: Counts fingers at one foot. Examination of the right eye showed a similar but somewhat smaller structure, situated in the same relative position and connected with the disc by a fine strand of grayish tissue. No vascularization could be made out. The vitreous was clear, and except for this structure nothing abnormal could be seen in any part of the eye. V. O. D. = 6/12 —, not improved by glasses. Increasing doses of mercury and iodid were prescribed, but seemed to have no lasting effect on the process. There was an occasional slight improvement and then would come a sudden diminution in vision caused by fresh hemorrhage on the membrane and increased clouding in the vitreous. By June the vision was reduced to the perception and localization of light, and the red reflex had entirely disappeared. On October 12 the patient again came to the clinic saying that two days previously the sight of the right eye had suddenly failed. Examination showed vitreous hemorrhage and large splashes of blood on the membrane. Vision = 3/60. The retina could barely be distinguished. Barring a greenish tinge to the iris the state of the right eye had not changed. She was taken into the hospital for observation and treatment. The course of the disease did not differ from that in the other eye. Under large doses of iodid and mercury the vision occasionally showed slight improvement only to fall off again from a fresh hemorrhage, which in each instance appeared to come from the membranous structure. Mercury and iodid gave place to lactate of calcium and large doses of gelatin,[1] and later to other drugs, over a period of three months. There was a steady loss of vision down to counting fingers at one foot, and it became increasingly evident that complete blindness would ensue were not energetic measures taken. Meanwhile, there was no sign of returning vision in the left eye.

Operation.—Remembering that in two somewhat similar cases, one reported by Mayweg[2] and one by Axenfeld,[3] ligation of the common carotid had apparently checked the disease, I explained to the patient the dangers of such an operation and the uncertainty of the result, and on the other hand the probability of blindness under medical treatment alone. Her good health and absence of all signs of vascular changes were in her favor. She chose to take the risk, and on December 10, the right common carotid was ligated by Dr. H. H. Germain under ether anesthesia. At this time the vision equalled counting fingers at one foot. The patient made an uncomplicated recovery from the operation save for a slight rise in temperature. She was kept in bed for two weeks.

Postoperative History.—December 11: V. O. D., counts fingers at five feet.

December 12: V. O. D., counts fingers at fifteen feet. With the ophthalmoscope the red reflex was perceptibly brighter.

December 14: V. O. D., counts fingers at twenty feet.

December 17: V. O. D. = 6/30. It was possible to distinguish the retina with both the indirect and the direct methods. The vitreous had cleared up markedly and the membrane was clearly visible. No fresh hemorrhage could be seen.

December 27: Patient discharged from hospital. Vision = 6/30+. There were no fresh hemorrhages and the vitreous was clearing slowly.

To our great disappointment, two days later there was a sudden diminution of sight and examination showed the membranous structure to be almost covered with fresh blood and the vitreous very cloudy. V. O. D., counts fingers at one foot. The attack came on spontaneously and did not follow exertion or excitement. Since that time the course of the disease has been about the same as before the operation and the vision on March 8 was limited to hand movements directly in front of the eye. The red reflex has almost entirely disappeared, but it is still possible to see the membrane faintly and to note that it is covered with blood.

1. We were unable at this time to estimate the coagulation power of the blood and treated her empirically on the assumption that it was retarded.
2. Bericht d. Ophth. Gesellschaft zu Heidelberg, 1889, 92.
3. Oberrhein. Aerzt., July 6, 1906; Münch. Med. Wochschr., 1906, III.

PREVIOUS CASES.

Mayweg,[2] at the twentieth meeting of the Heidelberg Society, reported the following case:

CASE 1.—A 17-year-old peasant had lost the sight of his left eye from repeated vitreous hemorrhages, although under capable treatment. Three years after the left eye first became involved, a similar process affected the right, and recurred four times. At the fifth attack he came to Mayweg, who found extensive hemorrhage into the vitreous and vision reduced to 20/200. There was no evidence of organic disease. In spite of energetic treatment there were six further recurrences and finally, ligature of the carotid was resorted to. This checked the process and eighteen months later the vitreous was clear and the vision = 20/40.

CASE 2.—Axenfeld[3] saw a healthy girl, 24 years old, who had lost the sight of her right eye from persistent vitreous hemorrhages followed by secondary glaucoma. Several years later the left eye became affected and the vision reduced to hand movements. Ligation of the common carotid controlled the disease and three months later there had been no further hemorrhage. The vitreous cleared up very slowly. I have been unable to obtain the later history of this case.

Before proceeding to consider the operative treatment involved there are one or two interesting features of the case reported above which deserve a few words. As to the nature of the membranous structures there is an element of uncertainty. On the one hand they may have been the organized remains of vitreous hemorrhage which took place at an earlier period in the patient's life, and very likely this would have been the assumption had the patient been seen only after the involvement of the second eye. It does not appear, however, that such was the true nature of the case for the following reasons: The structures resembled each other closely and were symmetrically placed. They were situated in the line of Cloquet's canal and, in the right, a fine strand of grayish tissue could be seen (before blood obscured the vitreous), running back from the structure to the disc. There was no vascularization and absolutely no sign of disease in the chorioid or retina (O.D.). It seems probable that we have in this case the remains of embryonic structures. Vitreous hemorrhages are occasionally observed in connection with a persistent hyaloid artery, as, for instance, in the case reported by Hickman.[4] Furthermore, it is well recognized that undeveloped organs form a locus minoris resistentiæ. The assertion of the patient at her first visit that the sight of the right eye had never been more acute favors this view.

It is worthy to note that in this case each hemorrhage appeared to take place from the substance of the membrane.

The rapid improvement in vision from 1/300 to 6/30+ in one week is striking evidence of the temporary efficiency of tying the carotid in these cases. On the other hand, the recurrence, ten days later, shows

4. Ophthal. Rev., 1902, 85.

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how quickly the circulation can be re-established from the collateral supply. That it was the operation which caused the improvement is hardly open to question.

For a time the patient was treated with lactate of calcium and gelatin on the theory that the coagulating power of the blood was diminished. As we were unable to determine then whether or not this was the case, and as there was no apparent improvement, this treatment was discontinued. Recently through the kindness of Dr. F. T. Lord, whom I here wish to thank, an estimation was made by Wright's method, and it was found that coagulation took place in 2 minutes and 50 seconds, the normal by this method being 1 minute 45 seconds to 2 minutes 10 seconds. Thinking that possibly the former preparation of calcium may not have been efficient, the patient has again been given this drug.

This method of determining the time of clotting is as yet in its infancy, but its great simplicity and availability give great promise. Although Wright and his assistants have indicated that retarded coagulation may be responsible for many and various lesions, there has as yet been little confirmatory evidence, still as in this case we have no other clue to the etiology, and as many other similar cases occur in which the causation is likewise obscure, the possibility of retarded coagulation as a cause is worthy of consideration in the future. Therefore, it would seem to be advisable to ascertain the clotting time in all such cases, and if it be slow the administration of calcium salts is indicated and may prove of marked benefit to the patient.

Whether we are justified, after medical treatment has failed, in proposing ligation of the carotid to these patients is the question which more nearly concerns us here. Our first consideration may well be the danger of the operation. We have a large mass of statistics on the subject of carotid ligation and they are somewhat complicated, owing to the fact that in pre-antiseptic days the danger of sepsis and of secondary hemorrhage had to be seriously considered, and added very materially to the mortality of the operation. Moreover, the disease for which the operation is performed has a marked influence on the mortality. It would seem fair to assume about the same rate of mortality after ligation for the cure of vitreous hemorrhage as that after the same operation for the relief of pulsating exophthalmos. Keller,[5] from the Zurich clinic, gives 4 per cent. in 31 cases. Slomann,[6] from 95 cases, some of the patients of which were operated on in the pre-antiseptic era, gives a mortality of 10 per cent. Werner[7] 10 per cent., Le Fort[8] 12 per cent., Murray[9] 10 per cent., de Schweinitz[10] 10 per cent.

For other diseases the mortality is much greater, as would be expected when we take into account the serious character of the lesions which call for this operation. Keller[5] gives 34-43 per cent., Le Fort[8] 43 per cent., Murray[9] 25 per cent. The total results of carotid ligation as quoted by Barnard and Rugby[11] are as follows: Tillman 31 per cent., Zimmermann 31 per cent., Pilz 18 per cent., and Friedlander 13 per cent.

As regards the dangers and complications of the operation, Erichsen, quoted by Barnard and Rugby,[11] says that cerebral symptoms occur early or late in 25 per cent. of the cases. The dangers of sepsis and hemorrhage may now be disregarded.

Blindness, from obstruction of the arteria centralis retinæ, has been noted by Elschnig,[12] Siegrist,[13] Gifford[14] and Uhthoff,[15] and has apparently in the majority of instances been caused by lodgment in this vessel of a fragment detached from the thrombus in the carotid. In any event this is an uncommon accident, for in the ordinary case closure of the carotid causes but a temporary disturbance of the retinal circulation. Uhthoff[15] and Hansell[16] have observed the temporary obliteration of the retinal vessels at the moment of ligation.

Sattler,[17] Wagenmann[18] and Silex[19] have seen lesions of the cornea, which have been referred both to trauma and to trophic disturbance. Axenfeld[20] has reported homonymous hemianopsia following ligation, and Michel[21] has seen cataract following thrombosis of the carotid.

In the case of a patient operated on in Boston hemiplegia and death followed carotid ligation and the autopsy showed the absence of the circle of Willis. All these complications are, however, of rare occurrence and need not be considered here.

Having spoken of the dangers and mortality of the operation, we must now consider what chances the patient has of benefiting by it, and here we have but little information to guide us. In pulsating exophthalmos we may assume from the statistics 50 to 80 per cent. of cures from the operation, but in recurrent vitreous hemorrhage we have only the three cases above on which to base an estimate. Mayweg's was successful, Axenfeld's successful up to the end of three months (later progress unknown), and the case reported here was a failure. The two favorable ones occurred in youth, mine in middle age.[22] In all three it was done as a last resort. On the one hand stands an operation of considerable risk and of uncertain value; on the other is almost certain blindness. In making a decision, the age of the patient and the condition of the vascular system are of great importance. In my own case no lesions could be found, but her age made it possible that they were present. We estimated her risk at from 15 to 20 per cent. In all cases with healthy vessels and no complications, and where the patient has chosen to run the risk after an impartial statement of the facts has been given, I believe that the operation is justifiable. Naturally this refers only to those cases in which the vision of one eye has already been lost and in which medical treatment offers small hope of saving the second eye.

Additional Note (June 1, 1907).—Since April 1 the condition of the patient has remained practically unchanged. V. O. D., hand movements at one foot. The second course of treatment with calcium lactate was no more successful than the first. Numerous estimations of the coagulation time showed a minimum of 2 min. 30 sec., which did not decrease even when large doses were given.[23]

5. Inaug. Diss. Zurich., see Michel's Jahrs., 1898, 606.
6. Doctordiss. Copenhagen, see Michel's Jahresbericht, 1898, 612.
7. Inaug. Diss. Tübingen, see Michel's Jahresbericht, 1898, 617.
8. Rev. de Chir., 1890, May and June.
9. Ann. of Surg., 1904, 421.
10. Quoted in Modern Ophthalmology; Ball, 640.
11. Ann. of Surg., 1904, 649.
12. Arch. f. Ophth., 1893, xxxix, 151.
13. Ber. d. Ophth. Gesell. z. Heidelberg, 1898, 10.
14. Ophth. Rec., 1899, 593.
15. Ber. d. Ophth. Gesell, 1898, 21, 22.
16. The Journal A. M. A., 1905, 536.
17. Quoted by Siegrist (13).
18. Quoted by Siegrist (13).
19. Ber. d. Ophth. Gesell., 1898, 23.
20. Ber. d. Ophth. Gesell., 1898, 22.
21. Quited by Siegrist (13).
22. Pollack (Michel's Jahresbericht, 1900, 368), has reported a case in which the artery was tied in a patient 66 years of age, and the second one ligated five years later without accident.
23. The technic used was that described in the Lancet, 1905, 1906.

In this connection I find that in four cases of vitreous hemorrhage Paton[24] and Paramore[25] found diminished clotting time, and Wright suggested that in these instances the hemorrhage might be due to thrombosis taking place in a small vein. Clearly the part played in this disease by abnormal coagulation of the blood is purely a matter of speculation at the present time and remains for future investigation to solve.

Professor Axenfeld has kindly written me that the progress of his case is still satisfactory. There have been no fresh hemorrhages and the vision two months ago was 6/12. I understand that he has had the carotid tied in a second case, but that it is too early yet to judge of the result. A detailed history of his first case may be found in the dissertation of Fräulein Bieber,[26] and from her paper I take this occasion to quote Siegrist's figures of 6 per cent. mortality in 997 cases of carotid ligation gathered from the literature. This writer (Siegrist) is of the opinion that if the patient's condition be good and if compression of the artery be carried out methodically before the operation, then ligation may be performed without serious danger to the patient.

[For the discussion, see the department of Section Discussions in this issue.]

METASTATIC CONJUNCTIVITIS IN GONORRHEA.*

JAMES J. CARROLL, M.D.
BALTIMORE.

Although gonorrhea was known to the ancients and ophthalmia neonatorum to the early Greeks and Arabians,[1] the true relation of the parent disease to its affiliated inflammations of the eye was still very imperfectly understood even at the beginning of the eighteenth century. While many of the primitive physicians appear to have fully recognized the ophthalmia of infants, it was not until 1750[2] that it was believed to depend on the vaginal discharge of the mother. Before this the theories as to its origin were rather vague, the old physicians of India, for example, ascribing it to the bad character of the mother's milk. In later years the ophthalmia of adults was thought by some to be due to gonorrheal virus seeking another outlet in consequence of suppression of the urethral discharge. Acting on this view Jüngken[3] recommended, in his text-book, the re-establishment of the flow from the urethra as the proper treatment for the ocular disease.

Without citing all the views and opinions in regard to gonorrheal affections of the eye which were in vogue before 1700, it will suffice to state that nearly all of them contained a belief in an internal or indirect route by which the venereal virus reached the eye in contradistinction to a direct or external route. This endogenous conception of the origin of gonorrheal affections of the eye prevailed until the time of Astruc,[4] who, in 1736, published the report of a case of purulent conjunctivitis which he attributed to direct infection, by the hands, from the urethra. This new theory made very slow progress. Although it was greatly strengthened in the beginning of the nineteenth century by the support of Jaeger, by the publication of Allan[5] and the lectures of Mr. Abernethy[6] at St. Bartholomew's Hospital, it did not supersede the old belief entirely until the experiments of Piringer[7] firmly established the direct causative relationship between the infecting material of the urethra and the inflammation of the conjunctiva.

After the convincing proofs of this investigator were known, the pendulum soon swung to the extreme, and it was not long before Ruete[8] and Arlt[9] maintained that all gonorrheal affections of the conjunctiva were the result of direct inoculation. While this was the prevailing belief, Fournier,[10] in 1866, described a type of conjunctivitis, occurring in a gonorrheic with inflamed joints, which he regarded as metastatic. In 1881, Haab[11] reported a case of bilateral conjunctivitis, which he saw in a patient with gonorrhea and which he thought was not due to direct infection on account of the absence of gonococci in the conjunctival secretion. In 1885, Haltenhoff[12] reported five cases of gonorrheal conjunctivitis without inoculation. In the following decade and a half appeared similar publications by Rückert,[13] Liebrecht,[14] Vanderstraeten,[15] Parinaud,[16] Morax,[17] Lipski,[18] Nobl,[19] Gielen,[20] Becker,[21] Lichtenstern,[22] Fage,[23] Morton[24] and others. In 1899, the subject was brought before the Ninth International Congress of Ophthalmology by Van Moll,[25] of Rotterdam, who reported six cases of his own observation. Kurka,[26] in 1902, published an account of twenty-two cases, two of which were seen by him in Professor Fuchs' clinic in Vienna and the others were taken from the literature. Later cases have been reported by Lesser,[27] Apetz,[28] Thorner,[29] Sym,[30] Paul,[31] Burnett[32] and others.

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Hirschberg (J.): Geschichte der Augenheilk., 1899, xii, 397, of Graefe-Saemisch Handbuch der gesamten Augenheilkunde, 2d Ed.
2. Guellmais: Ref. in Graefe-Saemisch Handbuch, etc., 2d Ed., v, chap. iv, p. 238.
3. Jüngken: Die Lehre von den Augenkrankheiten, Berlin, 1832, p. 252.
4. Astruc: De morbis Veneris, 1736, 192. Lutetiæ Parisiorum.
5. Allan: System of Pathological and Operative Surgery, Edinburgh, 1819, i, 153.
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7. Piringer: Die Blennorrhoe am Menschenauge. Gratz, 1841.
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In reviewing the text-books, I find that few give any space to metastatic gonorrheal conjunctivitis. The silence of many authors on this subject may be due to the fact that the field of ophthalmology has become so vast that it is almost impossible to cover it entirely without omitting one of the less frequent diseases. Of thirty-four books on the eye which have appeared in English, either as the original or as a translation, during the past twelve years, the disease is given in seven, being mentioned in two (Ramsey, Swanzy and Werner) and described in five (Fuchs, Schmidt-Rimpler, Lawson, Norris & Oliver's System, de Schweinitz). Many text-books, too, on genitourinary diseases fail to mention it, though Taylor, Fuller, Keys, White and Martin have a description.

One naturally hesitates to report as few as two cases, even though they furnish the main reason for this paper, which is to give the ophthalmologists of the Association an opportunity to express their views on a subject which, so far as I can learn, has never before been formally presented to the Section. A free discussion may do much to make this form of conjunctivitis better known, may help to determine the frequency of this disease in our country, may be the means of dispelling doubts which, I fear, still remain in the minds of some as to its existence, and may possibly suggest to some one a line of work for original investigation.

CASE 1.—T. C., white, aged 35, was in the second week of a first attack of gonorrhea, when his right eye became inflamed.

Examination.—Patient, with no history of rheumatism, came under my observation for the first time Jan. 19, 1905, at St. Joseph's Hospital, Baltimore, his ocular trouble having existed about ten days or two weeks. There was at that time photophobia, lachrymation, some soreness about the eye, but no decided pain, no swelling of the lids, pronounced injection of the conjunctiva of the eyeball with slight swelling, the episcleral vessels being well filled. There was a moderate amount of mucopurulent secretion; cornea, iris and deeper parts were in good condition; vision was not affected; the left eye was normal.

Subsequent History.—The right ankle had begun to swell and to give pain twenty-four hours previously, and two days later the patient suffered severely from pain in the region of the sacrum, which was in turn followed by pain and swelling of the right knee, and pain but no swelling of the right wrist. The inflammation of the right conjunctiva subsided under local treatment in about eight days. A day or so after the patient was first seen a Buller's shield was placed over the left eye to prevent any possible infection from the urethra or from the right eye. Under this protection the eye began to show signs of conjunctival inflammation three weeks after the other became diseased. The character of the conjunctivitis on the left side was identical with that on the right, but its course was shorter, due, probably, to the influence of earlier treatment. Pain and swelling of the left ankle and pain in the left wrist followed quickly on the onset of conjunctivitis on the left side. When this seemed almost well the patient was taken with pain in the left eye, accompanied by marked increase of redness of the eyeball, ciliary injection, and hyperemia of the iris. The pain soon became severe and the aqueous muddy; the pupil dilated imperfectly under atropin, showing three small posterior synechiæ. The anterior chamber became one-quarter filled with blood; the pupil was obscured by dull grayish deposit and the fundus was invisible. The eyeball was very tender to slight pressure and vision was reduced to counting fingers at four feet. The iritis lasted five weeks. The exudates slowly became absorbed and vision returned to 20/20. At one time during the course of the iritis on the left side the right eye became painful, showing some ciliary injection and discoloration of the iris. Atropin was used freely and no further developments were noted.

Bacteriologic Examination.—Coverslips alone were used. Pus from the urethra showed gonococci. Secretion from the conjunctival sac of each eye was repeatedly examined but always with negative results.

The case at first presented a complex of symptoms with which, I confess, I was not altogether familiar. It seemed perfectly clear that the condition was not gonorrheal ophthalmia or acute blennorrhea, and its resemblance to acute catarrhal conjunctivitis was not borne out by other clinical phenomena present, as gonorrhea and arthritis. The diagnosis of metastatic conjunctivitis was based on the following points: (1) the existence of a urethritis with gonococci, (2) the character of the conjunctivitis, (3) the absence of gonococci in the conjunctival secretion, (4) the presence of polyarthritis.

CASE 2.—J. H., white, aged 39, was referred to me by his family physician, Dr. W. T. Riley, March 5, 1907. The patient, with no history of rheumatism, was in the fourth week of a first attack of gonorrhea, involving both anterior and posterior portions of the urethra and producing prostatic enlargement and swelling of the seminal vesicles.

History.—The trouble started March 1, in both eyes simultaneously, with mild photophobia, lachrymation, redness, and slight secretion. Accompanying the onset of the ocular symptoms were frontal headache, vertigo, coated tongue, loss of appetite, chilly sensations, temperature 100 F., occasional sweating, pains in the lumbar region, in the right leg above the internal malleolus and in the larger phalangeal joint of the middle finger of the right hand. The eyes soon became worse, the lids being stuck together in the morning and the eyeballs more "bloodshot."

Examination.—The patient came under my observation on the fourth day, the condition then being about as follows: Marked injection of the conjunctiva, limited almost entirely to the fornix and globe, some swelling of the conjunctiva, particularly in the region of the limbus; several small conjunctival hemorrhages in each eye; episcleral vessels congested; moderate amount of mucopurulent secretion; no swelling of the lids; cornea and iris good; pupils small, though responding well to light; vision 20/30 in each eye, the slight impairment being due to myopic astigmatism.

Subsequent History.—Next day the eyes were worse, chemosis of the conjunctiva being rather prominent. The iris too showed for the first time unmistakable signs of inflammation. The pupils failed to react to light or fully to atropin, and vision sank rapidly to counting fingers at three feet. At the end of the first week the swelling of the conjunctiva was much less and there was hardly enough secretion in the conjunctival sac to get a smear for coverslip examination. The iritis, on the other hand, was rather more active; the aqueous was somewhat cloudy; there was a slight exudate in the pupillary area; the pupils were small and irregular, showing four or five posterior synechiæ in each eye, no precipitates were discernible on the posterior wall of either cornea; fundi were invisible. Pain in middle finger and leg on the right side was about the same. The patient about this time began to complain of pain in the left ankle, which was not severe and not accompanied by any swelling. At the end of the second week the iritis was still prominent. Fair dilatation of the pupils had been secured by the frequent use of atropin; the eyeballs were somewhat tender on palpation; there was no pain in the eyes, but dull frontal headache was occasionally felt. At the end of the third week there was improvement in the urethritis, in the inflammation of the eyes, and in the general condition of the patient, although pain was still present in the lumbar region, made worse by moving in bed. During the fourth week the eyes made little or no advance toward recovery. In the following week improvement was rapid and by the middle of the sixth week the eyes were practically free from inflammation and vision was normal with the assistance of minus cylinders to correct a little astigmatism.

Bacteriologic Examination.—This was made by Dr. E. H. Hayward, pathologist of St. Joseph's Hospital. Smears, taken when patient was received into the hospital on the fifth day of

his conjunctivitis, showed no gonococci in the secretion from the eye, but numerous gonococci in the pus from the urethra. Coverslips were examined twice a day as long as there was any secretion in the conjunctival sac, and always with negative results. Cultures from the secretion of the eye were made on human blood serum, blood agar, hydrocele agar, and all were negative. Culture on Loeffler's blood serum showed a single white colony of staphylococci. Culture from patient's blood on human blood serum was negative.

Though arthritis was not conspicuous as in the first case, the diagnosis in the second instance was based on the coexistence of gonorrheal urethritis, the type of bilateral conjunctivitis, the absence of gonococci in the conjunctival secretion, the iritis which appeared on the fifth day, and the slight but appreciable systemic disturbance.

In reviewing the literature on the subject I find that this form of conjunctivitis has been described under various names, as metastatic gonorrheal conjunctivitis, metastatic gonorrheal ophthalmia, gonorrheal conjunctivitis without inoculation, serovascular conjunctivitis, rheumatic gonorrheal ophthalmia, arthritis catarrhorheumatic ophthalmia, etc. In order to avoid confusion, it seems wise to adopt the title given in the second edition of the Graefe-Saemisch Handbuch, namely, metastatic conjunctivitis in gonorrhea.

Although described under so many different names, the disease has been represented with the same essential characteristics. The constancy with which these clinical phenomena appear together, and the number of such occurrences, preclude the possibility of mere coincidence. A study of the reported cases, as well as of the two which came under my observation, furnishes sufficient data for a rough description of the main clinical features of the disease. The primary infection being gonococcal, the disease starts out with an ordinary purulent urethritis. Usually rather early in the course of the gonorrhea, but at times during a second or subsequent attack, a conjunctivitis appears. The inflammation involves chiefly the conjunctiva of the fornix and eyeball, giving rise to marked redness and swelling and at times chemosis. Often the episcleral vessels are engorged, showing the characteristic pinkish or violet color. The secretion is mucoid, or mucopurulent. It is usually moderate in amount and contains no gonococci. The subjective symptoms are photophobia, lachrymation, slight soreness of the eye, and occasionally pain. Vision is not affected if the deeper ocular structures are not implicated. The conjunctivitis involves both eyes, either at the same time or in rapid succession, and ends in the restoration of the conjunctiva to the normal. It usually comes on before the joints are attacked, although this order may be reversed. The inflammation is occasionally limited to the conjunctiva, but it is more often accompanied or followed by iritis or iridocyclitis. When inflammation of the uveal tract occurs, it is usually of the serous or plastic variety. Keratitis is rare, varying in degree from a small area of infiltration to ulceration. Retina and optic nerve are very infrequently involved. In consequence of these complications vision may be very much reduced, but, barring corneal destruction, it returns as the intraocular exudates are absorbed. Though arthritis is not a necessary factor of the diseased process, it is almost always present. It generally occurs in more than one joint, the larger ones being more often attacked than the smaller.

An interesting feature of the disease is its tendency to recur. A new attack of conjunctivitis, followed by pain and swelling of the joints, may appear after a fresh outbreak of gonorrhea and be equally as severe as the first. In several instances the cornea and iris have become involved in the recurring attack after having entirely escaped in the initial one. Furthermore, an increase in the urethral discharge is often the forerunner of an exacerbation of both conjunctival and joint affection. In a case reported by Rückert there were three occurrences of urethritis, two of which were followed by conjunctivitis, one by iritis. In the case of Apetz there were two recurrences and two exacerbations, in all of which the conjunctiva was correspondingly involved. A single recurrence is more frequently met.

It may not always be possible to distinguish this disease, though in the majority of cases a diagnosis offers very little difficulty. The diseases which come into question are acute blennorrhea or gonorrheal ophthalmia of the adult and actue catarrhal conjunctivitis. The clinical picture of a typical case of the former is sufficiently characteristic to leave no doubt as to diagnosis, the tensely swollen lids, the greatly infiltrated conjunctiva, the profuse flow of pus containing gonococci being in marked contrast to the bilateral affection of metastatic origin with soft lids, relatively smooth conjunctiva of the lid and moderate mucopurulent secretion containing no gonococci. The diagnosis, however, must be made with care on account of the possibility of the case in question being one of mild gonorrheal ophthalmia, in which the virulence of the urethral infection was greatly weakened before the eye was inoculated. In such, an early bacteriologic examination of the conjunctival secretion will usually reveal the gonococcus, thus establishing the exogenous character of the inflammation. If, however, no gonococci are found, the existence of a metastatic arthritis or iritis will point to an endogenous infection of the conjunctiva.

From an acute catarrhal conjunctivitis the differentiation is not so easy if we regard the ocular condition alone. However, the localization of the inflammatory process, more in the conjunctiva of the fornix and eyeball than on the lid, and the presence of a deep episcleral injection, will strongly suggest metastatic conjunctivitis. The coexistence of gonorrhea will be additional evidence, and should an arthritis be present the diagnosis will no longer be in doubt, because metastases never exist in genuine catarrhal conjunctivitis. Even without metastatic joint inflammation the diagnosis may still be made by finding gonococci in the circulating blood.

Can simple iritis or iridocyclitis be mistaken for metastatic conjunctivitis? The congestion of the eye, if taken by itself, may not always be sufficiently characteristic to enable one to distinguish between the two, but if the patient is seen early, swelling and chemosis of the conjunctiva and mucopurulent secretion will exclude simple iritis with certainty. If, however, the patient is seen late, when the conjunctival symptoms proper have become less marked or are obscured by the involvement of the uveal tract, it may be no longer possible to tell from ocular appearances alone whether the initial inflammation was in the conjunctiva or in the iris. It goes without saying that in those cases of metastatic conjunctivitis in which no part of the uveal tract becomes involved iritis does not enter into the question of differential diagnosis.

All reported cases of metastatic gonorrheal conjunctivitis have occurred in men. Whether any reason exists for this in the anatomy of the male urethra and its adjacent organs it is difficult to say. Many authorities claim that systemic infection occurs more often through

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the prostatic portion of the urethra, while, according to Fuller, the seminal vesicles constitute the route frequently taken by the gonococcus or its poison in entering the general circulation.

The old belief of gonorrhea being purely a local disease has been made untenable by modern investigators, who have found gonococci in the circulating blood (Wertheim), in the fluid of arthritic joints, and in the heart (Thayer). The prevailing and well-proven belief is that, in addition to the local urethritis, gonorrhea may produce systemic lesions by the transportation of infectious material through the lymphatic or blood channels from the original seat of disease to distant parts of the body. In full accord with this are the clinical reports of gonorrheal complications which appear in the literature. Besides arthritis, we have well-authenticated cases of gonorrheal pericarditis, endocarditis, myocarditis, pleuritis, nephritis, phlebitis, myositis, subcutaneous abscess, general septicemia, diseases of the peripheral and central nervous system, and lesions of the skin. With this advance in knowledge before us regarding gonorrhea in its relation to the general system, it may not be amiss to ask ourselves if we, as ophthalmologists, should not modify our views of gonorrhea in its relation to the eye. Such a suggestion seems all the more timely, as many authors of text-books on ophthalmology give iritis alone as a possible metastatic complication of gonorrhea. Since Mackenzie first recognized gonorrheal iritis, reliable publications have appeared from time to time of cases of metastatic dacryoadenitis,[33, 34] conjunctivitis, tenonitis,[35] keratitis,[36, 37] iridochorioiditis,[38, 39] retinitis,[40, 41, 42] neuroretinitis,[43] optic neuritis,[44] and panophthalmitis,[45] all depending primarily on gonorrheal infection. In point of frequency, iritis is the most common, occurring, according to De Lapersonne, once or twice in 7,000 eye cases and conjunctivitis next. Kurka saw 2 cases of this in 20,000 patients frequenting Professor Fuchs' clinic in one year.

The work of investigators in determining the infecting material which brings about this metastatic conjunctivitis, and in establishing its relationship to the underlying disease has not been rewarded with uniform results. As a consequence three theories have arisen:

1. Some authorities maintain that the inflammation is due to the presence of the gonococcus in the conjunctival sac, the organisms being carried thither by the blood vessels. This is supported by the bacteriologic examinations of Lipski, Morax, and Van Moll, who found the gonococcus in the conjunctival secretion. The experience of these three observers is almost unique, as the great majority have failed to find the specific organism. In a review of 26 bacteriologic examinations of 40 reported cases I find that 22 showed no gonococci in the conjunctival secretion, 3 gave the organism in small numbers, and 1 examination was doubtful. Adding my 2 cases makes a total of 28 examinations, 24 being negative, 3 positive and 1 doubtful. Kurka, thinking the gonococci might be under the epithelium, excised a piece of conjunctiva from one of his patients and examined it microscopically, but was unable to detect the organism. The advocates of this theory bring to its support the investigations of Kämmerer, Petrone, von Lindemann, Höck and many others who have found gonococci in the fluid of arthritic joints, arguing by analogy that the same infection occurs in the conjunctiva. While the bacteriologic examinations in metastatic conjunctivitis are not conclusive, it seems probable, in view of the inability of observers to find the gonococcus in the conjunctival secretion, that some other infective agent must be the chief one in this inflammation.

2. The second theory is that the conjunctivitis is the result of mixed or secondary infection; that the gonococcus does not play the important rôle, but rather prepares the soil for another organism as the staphylococcus, the streptococcus, or the pneumococcus. Van Moll found the first in the conjunctival secretion of five out of his six cases, and, inasmuch as the staphylococcus has been frequently found in the fluid of gonorrheal joints, he concluded that the conjunctivitis was probably a mixed infection in which the staphylococcus was the chief agent. To this it may be objected that staphylococci are often found in the normal human conjunctiva and that, as Axenfeld has said, they show themselves in the conjunctival sac at the slightest irritation, even when they are not the exciting cause. Many authorities who adhere to the theory of mixed infection base their belief largely on those experiments made on gonorrheal joints in which the gonococcus was not found, but in which the staphylococcus was the organism in evidence. Conclusions, however, from joint examinations must be drawn with care, because with the common method of aspirating joints the gonococcus, if imbedded in the synovial membrane or present in the periarticular tissues, may easily go undetected. From conversations with laboratory workers I learn that it is their experience that with modern technic and careful examination of gonorrheal metastases the gonococcus is found more frequently in pure culture than formerly, and cases of so-called mixed infection are becoming less frequent.

3. The third and perhaps the most tenable theory founded on present knowledge is that this type of metastatic conjunctivitis is not directly and essentially an infection by the gonococcus itself, but is the result of a poisonous product of this organism acting on the cellular elements of the conjunctiva. This possibility was suggested by Axenfeld in discussing Van Moll's paper at Utrecht in 1899. The majority of writers since then are more inclined to this view than any other. It seems, too, to be well supported by the experiments of Wassermann,[46] Nicolaysen,[47] Laitinen,[48] Grosz and Kraus,[49]

33. Cause (F.): Metastatische Tränendrüsenentzündung bei Gonorrhoe. Ztschr. f. Augenh., 1904, xi, 399.

34. Panas: Dacryoadénite, iritis, et conjunctivite séro-vasculaire d'origine blennorrhagique. Jour. des Prat, Feb. 21, 1894.

35. Puech: Un cas de ténonite. Clin. ophth., January, 1895.

36. Martin: Recherches anatome-pathologiques sur les inflammations métastatiques à la suite de la gonorrhée. Génève Diss. Ref. in Arch. f. Augenheil., xiv, 117.

37. Burchardt: Entzündung der Iris, der Hornhaut, der Sehnervenscheibe und der Netzhaut infolge von Gonorrhoe. Charité Annalen, 1897, 345.

38. Bull (C. S.): Systemic and Constitutional Character of Gonorrhea, Illustrated by five cases of iridochorioiditis. Med. Record, 1902, lxii, No. 25.

39. Galezowski: Des irido-chorioidites gonococciques. Progrès Méd., January, 1905.

40. Burchardt: Entzündung der Iris, des Strahlenkörpers des linken Auges, Netzhautentzündung beider Augen, und mehrfache Gelenksentzündungen nach Gonorrhoe, Charité Annalen, 1894, 246.

41. Galezowski: Sur les altérations vasculaires de la rétine dans l'infection blennorrhagique. Ann. d'Oculist, 1900, i, 301.

42. Hilbert: Retinitis infolge von gonorrhoischer Infektion. Ztschr. f. prakt. Aerzte., vii.

43. Highet: Case of Neuro-retinitis. Abst. in Med. Bull., Phila., April, 1896.

44. Panas: Névrite optique d'origine blennorrhagique. Presse Méd., 1895, 64.

45. Galezowski: Irido-chorioïdite avec névrite optique et panophtalmie dans une méningite cérébro-spinale gonococcique. Rec. d'Opht., Paris, 1903, xxv, 309.

46. Wassermann: Ueber Gonococcuskultur und Gonococcengift. Berl. klin. Wochschr., 1897, No. 32.

47. Nicolaysen: Zur Pathogenität und Giftigkeit des Gonococcus. Centrbl. f. Bact., 1897, xxii, p. 305.

48. Laitinen: Beiträge zur Biologie des Gonococcus. Centrbl. f. Kenntnis der Bact., 1898, xxiii, 874.

49. Grosz und Kraus: Bacteriologische Untersuchungen über den Gonococcus. Archiv. f. Derm. und Syph., 1898, xlv, 329.

Christmas,[50] Morax and Elmassian,[51] and Randolph,[52] These investigators have demonstrated that the gonococcus generates a specific active poison, the gonococcus-toxin, which is contained in the body of the organism. All of them agree that the bodies of gonococci possess this toxic material, but all do not hold that one is artificially separable from the other. Wassermann, Nicolaysen and Laitinen maintain that the poison is confined to the body of the organism, while Christmas, Morax and Elmassian and Randolph believe that it may be, at least in part, dissolved in the liquid of the culture medium. While the toxin has not been chemically defined as yet, it has been proved by biologic test to possess properties separate and distinct from those of the gonococcus. The latter is destroyed by a temperature of 40 C. (Wossidlo), while its toxin is destroyed by a much higher temperature, according to Christmas 80 C., according to Morax and Elmassian 115 C. It is very much more difficult to preserve artificially the activity of the gonococcus than that of its toxin. While it is impossible to obtain an inflammation with proliferation of the gonococcus on the animal conjunctiva, whatever the mode of inoculation, it is quite possible, according to Morax and Elmassian, to obtain an analogous condition by instilling the toxin into the conjunctival sac of the rabbit. It has also been shown that intraperitoneal as well as subcutaneous injections of the toxin have produced death in animals, chiefly guinea-pigs and white mice, and a solution of this poison has caused urethritis, differing from the genuine gonorrhea only by the absence of gonococci.

Without giving in detail the work of the various investigators of this subject, I wish to refer to the experiments of Morax and Elmassian, which were given to the Utrecht Congress of Ophthalmology and with which all members of this Section are doubtless familiar. It will be recalled that these Frenchmen experimented with the live as well as the dead cultures of the gonococcus; that they instilled into the conjunctival sac of rabbits and man an emulsion of dead gonococci and the filtered cultures of these organisms and produced an inflammatory conjunctivitis both in the rabbit and in man. That this reaction was not a mere mechanical effect was proved by control experiments. The possibility of the gonococcus having anything to do with it was excluded by boiling the medium. It seemed perfectly clear to the minds of the investigators that this artificially produced conjunctivitis was due directly to the action of the toxic substance which they dissolved from the bodies of gonococci.

The results of Morax and Elmassian might seem at first sight to be contradicted by the more recent work of Randolph in the Johns Hopkins laboratory. The latter experimented with filtrates of the gonococcus on rabbits and found that simple instillation into the conjunctival sac produced reaction in only one instance. In the animals which showed no conjunctival reaction, the instillations were continued from 15 minutes to 3 hours, while those of Morax and Elmassian were kept up from 2 to 7 hours, the majority being from 5 to 7 hours. It may be that the difference in duration of instillation may account in part for the difference in results. Randolph, however, produced a conjunctivitis in every case in which he injected the filtrate into the conjunctiva. By introducing the toxin under the epithelium he facilitated absorption and produced a local reaction more quickly than could be obtained by continuous instillation.

Although the investigators who have been working along the line of the present subject have brought to light most valuable information, they have not produced uniform results. Reasons for this are not hard to find: (1) The technic of the investigations is very difficult; (2) most animals are not affected by the gonococcus, though they seem to be susceptible to its toxin; (3) the nature of the gonococcus toxin is still very much in doubt; (4) gonorrheal metastases of the eyeball lend themselves badly to experimentation; (5) metastatic conjunctivitis being rare, opportunities for studying the disease seldom present themselves.

To me the study of this subject has suggested that perhaps better data might be furnished if the bacteriologic examination in each case of metastatic gonorrheal conjunctivitis were made early and included not only the conjunctival secretion, but also the blood, and the effusion of the joints if arthritis be present.

In conclusion, it may be suggested as a fair hypothesis in the light of our present knowledge that while it is possible, as maintained by Morax thirteen years ago, for a few cases of metastatic conjunctivitis to be caused by the gonococcus in the conjunctival sac, it is probable that the essential agent in the great majority of cases is not the gonococcus acting on the ocular mucosa, but a specific poisonous product of this organism called its toxin.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

50. Christmas: Contribution à l'étude du gonococcus et de sa toxine. Ann. de l'Inst. Pasteur, 1900.

51. Morax and Elmassian: Du rôle des toxines dans la production des inflammations de la conjonctive. IX. Congrès Internat. Ophthalmologie, Utrecht, 1899, August.

52. Randolph: The Rôle of the Toxins in Inflammations of the Eye, Johns Hopkins Bull., Baltimore, 1903, xiv, 47-50.

THE TREATMENT OF LACHRYMAL OBSTRUCTION.*

MARK D. STEVENSON, M.D.
AKRON, OHIO.

Before this Section it is not necessary to discuss the treatment of all the various obstructive causes of epiphora. Those cases due to psychic or reflex causes, to refractive errors or in which hypersecretion is due to other non-obstructive causes will not be considered. The treatment of those portions of the tear drainage apparatus above the lachrymal sac, being well understood, will receive but little attention. However, further consideration of the treatment of pathologic conditions of the lachrymal sac and nasal duct, especially if it leads to free discussion, seems timely, since the diverse methods now employed indicate that it is not well understood. The necessity of treating abnormal conditions in the nose will be emphasized, since they are very important in the etiology of these affections.

For purposes of treatment, I divide the tear drainage apparatus into three parts. The upper portion includes the puncta and canaliculi. The treatment of this upper part has been much discussed and is fairly satisfactory. The lower portion, an examination of which should never be neglected, and the treatment of which is often

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very important, is that part of the nose into which the nasal duct drains. Pathologic conditions of this part are the most common causes of inflammation of the other parts of the drainage apparatus. The middle portion comprises the nasal duct and lachrymal sac. This portion is less accessible than the others and treatment correspondingly less satisfactory.

In beginning the treatment for epiphora, only conservative measures should be used for the middle portion—the lachrymal sac and nasal duct—until the conditions which could cause obstruction in the upper and lower portions are first corrected. The surgeon should treat these cases not only from the standpoint of the ophthalmologist, but also from that of the rhinologist.

If there is pus or mucus in the lachrymal sac—dacryocystitis—extirpation of the sac is often required, but conservative treatment should first be given a trial. The pus or mucus should be pressed out frequently. A small swab of cotton placed over the sac and inner canthus absorbs the expelled secretion so that it will not be sucked back into the sac when the pressure is removed. Antiseptic and astringent solutions dropped into the inner corner of the conjunctival sac just before removing the pressure of the finger, are easily introduced into the lachrymal sac. This, with removal of the lachrymal obstruction and treatment of the probable nasal cause, sometimes affords relief. One canaliculus should usually be slit. When there is much swelling, Risley[1] points out the special danger of making false passages until it has been reduced by cold compresses or other antiphlogistic treatment.

As the first step in the treatment of all other cases, except those in which the lids or puncta are everted or in some chronic cases of lachrymal obstruction, especially those that have been probed, I carefully dilate both puncta sufficiently to pass the smallest sized probe through the canaliculi. In order that no false passage be made, the canaliculus should be straightened as nearly as possible by stretching the lid outward with the fingers. At this stage, I do not pass the probe farther than merely to enter the lachrymal sac, but repeat the probing a few times, a day or so apart, to prevent the formation of a stricture. If in syringing, the fluid readily and without much force passes into the nose, it shows that the remainder of the drainage canal is patulous. In this case simple measures, as gentle dilatation, syringing, the use of mild astringents and massage of the sac, will likely be rewarded with a good result. Therefore, probing of the nasal duct, or other radical measures, should not be resorted to unless the epiphora persists after a careful and thorough course of treatment, and not until, as de Schweinitz[2] insists, the causative factors, obstructive and otherwise, as psychic, reflex, and those of nervous origin, are first considered.

Any short hypodermic or lachrymal syringe, armed with a dull needle or other small blunt-ended canula, may be used for syringing when the canaliculi are small. A larger canula can be used when the canaliculi are dilated or after slitting. The syringe should be short and not too large, in order that the hand holding it may be steadied by resting the fingers against the forehead of the patient and so that too much force will not be required to press the piston home, which would make it unsteady, jabbing the patient and thus causing pain. J. S. Kirkendall[3] described an excellent syringe which he had made by E. B. Meyrowitz. I have had a somewhat similar syringe made by V. Mueller & Co., Chicago. Regurgitation from the opposite canaliculus can be prevented by constricting it with a small clamp placed on the lid. I directed the making of a simple clamp manufactured by V. Mueller & Co., Chicago, with which different degrees of pressure may be made. It is very light, weighing only seventeen grains, and can be readily applied and removed. W. Gordon Byers[4] recommends a canaliculus clamp which he had made by E. B. Meyrowitz. In the same article he describes a syringe nozzle which swells some distance from the end, so that when pressed home it completely stops up the canaliculus being syringed, and thus prevents regurgitation from it.

The canula should not pass farther than the lachrymal sac, and at first the syringing should be repeated every day. Syringing is most useful in cases seen early, and must be thoroughly and perseveringly done, which requires the cooperation of the patient. Any mild astringent solution, e. g., adrenalin chlorid, zinc sulphate, gr. ½ or 1 to the ounce, or some simple cleansing solution, as plain distilled sterile water, or saturated solution of boric acid, etc., may be used. In some cases of dacryocystitis, I have found very weak solutions of silver nitr very efficient, but, like its various much lauded subst s, it is liable to produce argyrosis.

eated cleansing of the sac may be necessary for a wee or more before the congestion is sufficiently reduced that fluid may pass into the nose, after which time the syringing is repeated at constantly increasing intervals. Indeed, patients can be taught to use a syringe themselves, preferably one with a rubber bulb. It is easier than to teach them to use a probe. If there are weak spots in the sac wall, especially after probing, syringing must be gently done or the walls may be ruptured.

If the fluid can not be made to pass into the nose, there is an obstruction either in the nasal duct or the lachrymal sac or at the outlet into the nose. It is well known how rarely the lachrymo-nasal canal becomes diseased secondary to conditions of the conjunctival sac, even when gonorrheal or diphtheritic conjunctivitis is present, but the nasal factor in the etiology of these troublesome conditions must not be overlooked (Brewerton,[4] Meyer[5]). J. Herbert Parsons[6] states that the infection generally spreads up the nasal duct from the nose, though, in rare cases, it may start in the conjunctival sac. He remarks that conjunctivitis rarely causes dacryocystitis, although the latter and rhinitis often give rise to conjunctivitis, which, in turn, excites an overproduction of tears. Byers writes: "The initial changes in chronic catarrh of the lachrymal duct occur, as a rule, about the inferior meatus." At first epiphora is usually complained of when going out into the cold or wind or during a coryza, when the cavernous tissue of the nose is swollen, and later it is aggravated by the same conditions.

The slit-like outlet of the nasal duct into the nose is surrounded by cavernous tissue with its dense plexuses of vessels, often capable of such swelling as to occlude the space around the opening. It is, therefore, in a portion of the nose frequently inflamed by coryzas, where the cavernous tissue is constantly changing in bulk, in an effort to warm, clean and moisten the inhaled cold,

1. THE JOURNAL A. M. A., Dec. 24, 1904, page 1963.
2. Trans. Sec. Ophth., Col. of Phys., Philadelphia, 1905.
3. Ophth. Rec., October, 1904.
4. Ophthalmoscope, April, 1906.
5. Berl. klin. Wochschr., 1906, xxiii, 751.
6. Brit. Med. Jour., Feb. 23, 1907.
7. Ophth. Record February, 1904.

dry and often irritating air. The tissues on the inferior turbinate bone may become so hypertrophied as to press on the floor of the nose and shut off proper drainage. This also may be brought about by spurs on the septum or deflections of it, polypi or other abnormal conditions of the nose, often limited to one side, just as the epiphora is.

The mucous membrane walls of the lachrymal sac and nasal duct, continuous with the mucous membrane of the nose, like those of most ducts in the body, normally lie in contact, and are surrounded by well-developed venous plexuses connected with the cavernous tissue of the nose. It can readily be seen that inflammation of the cavernous tissue around the outlet of the duct blocking it would sooner or later cause an engorgement of the vessel plexuses which underlie the mucous membrane of the nasal duct. Therefore, inflammation easily extends from the nose to these tissues, which, when swollen within a bony canal, especially if catarrhal inflammation has also extended along the mucous lining, partially or wholly obliterate the lumen of the duct, so that more than normal force is required to press the tears through into the nose. In this way a stagnant, irritating fluid containing micro-organisms accumulates, forcing the walls of the sac and duct apart and causing them to secrete more fluid and later even mucus and pus. Tooke[8] says that a more fertile field for the production and cultivation of bacteria than a stagnant lachrymal sac is difficult to find. The walls of the sac are weakened and gradually give way to the pressure of the fluid, losing their elasticity. Therefore, in all cases, the portion of the nose into which the nasal duct empties should be thoroughly examined before treatment is commenced, and especially before passing probes or otherwise radically treating the nasal duct.

It is often difficult, even in fresh specimens, to find the outlet of the canal under the inferior turbinate, and it is usually not possible to examine the exact outlet. Much can be done, however, to relieve congestion in its locality. In many cases the epiphora may be temporarily relieved by a local application of a solution of adrenalin or silver nitrate applied by means of cotton wrapped on the end of a bent probe. In order to reduce the redundant tissue, it may be necessary to cut or cauterize through the mucosa, or even to remove a portion of it. Sometimes the anterior end of the inferior turbinate, mucous polypi or other growths should be removed, and any inflammation, hypertrophy or malformation treated, which might cause obstruction, e. g., syphilitic or scrofulous rhinitis, ulcers or scars due to syphilis or lupus. The treatment of this portion of the nose must be gentle; large scars might so pull the mucous membrane as to interfere with the nasal duct opening. Nasal sprays or washes are often very useful. Probing from below, while perhaps rarely possible, is impractical and likely to irritate and inflame the often valve-like lips of the linear-shaped opening in the mucous membrane, an opening always difficult to find.

However, if no obstruction to the drainage of tears into the nose can be discovered, or if such is removed, and still fluid will not pass, the stricture must be in the lachrymal sac or nasal duct, and in such cases is generally situated near the lower portion of the sac where the lumen is narrowest. In examining a large number of skulls, I have noted that the bony canal is seldom round, but usually elliptical or oval in shape, with its long axis from before backward, or backward and slightly inward. The lumen of the nasal duct is slit-like, its long axis more or less nearly corresponding with the lumen of the bony duct. The bony canal is seldom straight. It can readily be appreciated, therefore, that when the nasal duct is not straight, but sometimes even tortuous, a practically straight probe pushed against the mucous membrane where the duct bends is liable, unless great care is exercised, to injure the mucous membrane at this point, possibly tearing it if the point of the probe is sharp, certainly bruising it against the bony wall, and no doubt denuding it of some of its softened and swollen epithelium. It may also lacerate the subepithelial tissues and even cause slight hemorrhages in the submucous vascular tissues. It is too often forgotten that the outer lining, the periosteum, is easily inflamed by any trauma, as indicated by aching for a long time after probing, especially in rheumatic, scrofulous or syphilitic subjects. The lower end of the membranous duct leading to its slit-like opening, which is situated somewhere in the mucous membrane of the nose beneath the inferior turbinate, is probably seldom in line with the rest of the duct. Therefore, it is easily seen that a probe held in a fixed position by the bony duct is likely to irritate, congest and inflame the delicate mucous membrane of the lower end of the duct and the nasal mucous membrane near its outlet, both of which must usually be pulled out of their normal position, pressed against contiguous bone, sometimes crushed and torn by the straight probe. This passing of the probe completely into the inferior meatus—except in the cases in which it has previously been passed—is uncalled for and dangerous, often giving rise to strictures in this part and even to proliferation of granulation tissue about the mouth of the duct, which obstructs it. This may sometimes be due to adhesion of the injured and subsequently inflamed lips of the opening through the nasal mucous membrane.

I used to believe that probes were not properly employed unless they were passed completely into the nose, but in some cases I discovered that, whereas, in the beginning, after probing, I was able to syringe freely into the nose, that later, after having probed for some time, it became impossible to do this. As I pointed out in a former paper,[9] this was simply due to the formation of strictures or granulation tissue about the outlet of the duct, resulting from the irritation produced by passing straight probes through its lower crooked end. In addition, this portion of the nasal mucous membrane is probably often irritated by an abnormal discharge from the duct. It is, therefore, well to remember that, while there may be more than one stricture in a case, only one may exist, and that indiscriminate probing may cause others, and that in any case it is unnecessary and unwise to pass a probe farther than the lowest stricture.

Since most strictures of the nasal duct are at its upper end, why should not the operator, when other treatment has failed and he feels compelled to use probes, at first pass them only a short distance into the duct and then try if he can not syringe through it? If he can not succeed in syringing he can pass the probe still farther and again try syringing until successful. In this way it will frequently be found unnecessary to pass the probes down into the nose, but only a short distance into the duct, with, therefore, less danger of producing new hemorrhages, strictures or granulations in the duct or about its outlet.

Cases that require complete passage of the probe be-

8. Brit. Med. Jour., Dec. 22, 1906.

9. Lancet-Clinic, Jan. 7, 1905.

fore syringing can be accomplished, often do not give good results unless due to an acute congestion of the submucous vascular tissue, which later subsides, due to a bettered condition in the nares, if luckily the mucous membrane has escaped severe injury from probes.

The very small probe, although it may properly be used in the canaliculus, is quite likely to produce false passages in the nasal duct (Risley[1]). On the other hand, since the membranous walls of the nasal duct normally lie in contact, there is probably little necessity for making its lumen an open drain for the free passage of infectious nasal secretions and even air, by passing probes, often larger in diameter, especially in certain directions, than the bony canal itself. The nasal duct and the urethra demand different treatment, since there is little physical analogy between the two, the undilatable bony nasal canal being nearly filled with periosteum, submucous vascular tissue and mucous membrane, structures very easily injured. I prefer medium-sized silver probes, elliptical in shape, which more nearly correspond to the usual shape of the duct and bony canal and are, therefore, more easily passed than round probes of similar size. The ends are blunt so as to injure the mucous membrane as little as possible.

Holmes[10] has well said: "Any one, if enough strength is used, can make a false passage in the nasal duct with any probe." False passages and rupture of the ethmoid cells with the formation of inflammatory tissue about the sac may result, making subsequent operation more difficult. Parsons[2] remarks that, "no matter how skilfully probing may be performed, it is almost inconceivable that grave damage will not be done." The new fibrous tissue resulting from abrasions or hemorrhages is at first elastic and resilient, but it contracts as it organizes, necessitating the further use of probes and those of larger caliber. Since the nasal duct is well supplied with sensory nerves, probing is most painful and, therefore, it is difficult or even impossible to persuade the patient to persevere in treatment. Soon the contraction of fibrous tissue, together with fresh inflammation again occludes the duct. Epiphora and regurgitation of pus have usually continued for some time before the patient again has the courage to undergo treatment. Large probes are necessary to stretch the now more resistant fibrous tissue, and Parsons[2] well says: "And so the weary cycle goes on, epiphora and pus alternating with probes and pain."

I think the tendency at present is toward the greater use of the syringe, giving the probe a less active part in the treatment of these cases (Snyder[11]). Byers[7] finds that after several injections of a solution of adrenalin a few minutes apart, each injection reducing a part of the engorgement in the nasal duct, it is usually possible to syringe fluid through into the nose. Astringent solutions are not only helpful because of their action on the mucous membrane of the duct, but also because they tend to reduce the congestion around the outlet of the duct in the nose, a part frequently inflamed because of irritating discharge from the duct or from the free passage of probes, and usually difficult to reach with topical applications made through the nose.

I addressed a few questions to a number of prominent ophthalmologists, but can find space for the replies to only two of them.

10. Arch. of Ophth., 1899, xxviii, No. 1.
11. Ophthalmology, October, 1906.

Have you objections, and if so, what, to removal of the lachrymal sac in chronic dacryocystitis or in chronic lachrymal obstruction, where conservative measures fail to give relief?

HUBBELL has never felt it to be necessary.

SNYDER has no objection to the operation when necessary, but thinks few cases need removal.

DONOVAN advises it only after thorough treatment with large probes has failed.

WURDEMANN rarely fails to cure by other means, and has found it necessary to remove only two sacs.

KNAPP says that the extirpation of the sac does not give perfect relief from overflowing of tears, but, of course, it cures purulent conditions.

GIFFORD practically never finds it necessary to destroy the sac except when the canal has been obliterated by trauma. In such cases, he destroys the sac with the Paquelin cautery, but has never extirpated one.

HANSELL, when probes will not relieve after slitting the canaliculus, removes the sac.

VAIL has no objection to the operation, although he thinks that nearly every case can be cured without. He says it should be urged before opening the eyeball.

TAYLOR says that he has no special objection to it, but has nearly always found that other measures give relief.

THEOBALD has none, but thinks it called for in very few cases.

DUNBAR ROY, STRICKER and BAKER have no objection to it in cases of chronic dacryocystitis, but think it unnecessary in chronic lachrymal obstruction.

HIRAM WOODS has no objections, but finds that many patients decline the operation.

DE SCHWEINITZ writes that he has not only no objections, but is sure it is the proper procedure. In an accompanying letter, he says: "I have practically given up the use of probes, certainly so far as the treatment of chronic dacryocystitis is concerned."

CASEY WOOD writes: "I have no objection, on the contrary, I greatly prefer the operation when other means of cure have failed."

BEARD answers "No, on the contrary, I resort to the operation more and more frequently as time goes on."

WILDER says he approves of the operation.

MILLIKIN, A. E. BULSON, JR., ZENTMAYER, LAUDER, FOX, CARROW, WHITE, HOWE, BRUNS, ELLET, MELVILLE BLACK, REBER, JOHN GREEN, JR., WILLIAMS, TODD, VEASEY, RISLEY, JACKSON, WESCOTT, CONNER, RANDOLPH, PARKER, NELSON M. BLACK and ATKINS have no objection to the operation under the conditions mentioned in the question.

GREENWOOD thinks it should be advised more frequently.

PRINCE says that he removes the lachrymal sac in all cases of chronic dacryocystitis when the patient's consent can be obtained.

SNYDACKER says that he considers it, if properly done, the only rational procedure in the conditions mentioned in the question.

SAVAGE has had satisfactory results by removal of the sac.

WEEKS has no objection to it, and frequently performs the operation under such circumstances.

TOOKE emphatically recommends the extirpation of the sac in chronically inflamed conditions, or whenever regurgitation of pus or mucopus is maintained by obstruction in the nasal duct.

BYERS writes: "In cases of chronic obstruction of the lachrymal canal in which conservative measures have failed to give relief, and especially when the condition is associated with the formation of pus which yields cultures of highly virulent bacteria, I have not only no objection to the removal of this structure, but consider the operation expedient for the comfort of the patient and safety of his eye."

My next question was:

(a) Do you consider it advisable to remove the sac and gland in one operation? (b) How often do you find it necessary to operate on the lachrymal gland after removal of the lachrymal sac? (c) In such cases, do you remove all or only a certain portion of the lachrymal gland?

RISLEY has had no experience with removal of either sac or gland, and believes it to be rarely necessary.

THEOBALD says that he has never done either operation.

HOLMES replies: (a) Yes, on account of one anesthesia. (b) He always removes both because otherwise patient suffers from "tearing" all his life. (c) He removes all of the gland.

CARROW: (a) Yes. (b) He always removes the gland when he operates for ablation of the sac. (c) All.

GREENWOOD: (a) Yes, in young people. (b) In middle-aged and elderly people, removes the sac only. (c) He removes the whole gland.

WEEKS: (a) No. (b) He removes the gland after removal of the sac in a minority of cases. (c) He removes the orbital portion, the principal portion of the gland, and leaves the palpebral.

A. E. PRINCE: (a) Removes sac and gland at one operation if there is an excess of lachrymation. (b) He considers it often necessary to remove the lachrymal gland after removal of the lachrymal sac before the epiphora is completely stopped. He adds that many patients have no special trouble with epiphora after removal of the sac.

A. E. BULSON, JR., removes the sac only, and if necessary a portion of the gland later.

ELLETT has never removed the gland, but thinks that it ought to be done when the amount of lachrymation after removal of the sac is considerable.

DE SCHWEINITZ: (a) He does not. (b) He has only once found it necessary to remove the whole gland. (c) He sometimes removes the palpebral part of the gland.

GIFFORD: (a) Not unless the patient is going to leave for uncivilized parts. (c) If lachrymation continues annoying, he would remove palpebral portion of the gland, and later, if necessary, the orbital portion. He has seen one case in which hemorrhage into the orbit, with atrophy of the optic nerve, and oculomotor paralysis followed removal of the gland.

BYERS (a) No. (c) The accessory portion of the gland.

TOOKE answers: (a) No, since satisfactory results are obtained by the complete removal of the sac. (c) In some cases he might remove the accessory portion of the gland.

DONOVAN: (a) No. (c) Would remove a portion first.

Casey Wood: (a) He is opposed to the removal of the sac and gland at one sitting, particularly as the excision of the former very often brings about a cure without recourse to removal of the gland.
Fox: (a) No. (b) Never.
Lauder: (b) Never.
Jackson: (a) No. (b) He does not consider it necessary to remove any portion of the gland.
John Greene, Jr.: (a) No. (b) He has never removed the lachrymal gland.
Beard: (a) No. (b) Never. It is quite unnecessary.
Wilder: (a) Never. (b) Rarely. The lachrymation that might have been considerable before removal of the sac, because of the reflex irritation from the inflamed sac, usually grows less after extirpation.
Würdemann has never removed the lachrymal gland for such purpose.
Hansell never removes the gland except when it is the seat of a new growth.
Woods removes the gland only in malignant diseases of the orbit and would hesitate to do so for the relief of epiphora after an excision of the sac.
Dunbar Roy, Ayres, Strickler, Nelson M. Black, Connor, Williams, Reber, Wescott, Parker, Savage, Bruns, Zentmayer, Howe, White and D. W. Stevenson have never found it necessary to remove the lachrymal gland.
Veasey does not remove the gland and finds it unnecessary.
Vail is satisfied that the gland need not be removed. He says that if the conjunctivitis due to the dacryocystitis is cured, no epiphora will be present.
Baker has not found it necessary to remove the lachrymal gland, as patients are usually satisfied with the cure of the dacryocystitis and have not been troubled much with epiphora.
Posey writes that he has removed about thirty sacs in subjects of all ages, but has never found it necessary to remove the gland.
Todd finds that his patients receive the desired relief by the removal of the sac.
Melville Black has never found it necessary to remove the lachrymal gland, as he finds the epiphora better when the conjunctivitis disappears after removal of the sac.
Snydacker has removed the lachrymal sac fifty-two times, and while a majority of the patients complain of epiphora in cold weather, he has not thought it advisable to remove the gland.
Parsons[4] states that if syringing and other measures fail, extirpation of the lachrymal sac offers a really radical cure, and, in certain conditions, he strongly advises it.
Evans[12] says that the only effective way of treating chronic dacryocystitis, and so removing a prolific source of blindness, is by removal or obliteration of the lachrymal sac, but he believes excision infinitely preferable to obliteration.

I think that the sac should be extirpated under the following conditions:

1. When pus or mucopus can be pressed out of it, unless the disease yields to a reasonable amount of conservative treatment, which does not demand of the patient too much sacrifice of nervous energy, time and money. On account of the danger of hypopyon ulcers, the demand for removal is imperative in those whose eyes are frequently subjected to injuries, as farmers, mechanics, stone cutters and lumbermen.

2. In cases in which the dacryocystitis is bilateral and the patient has already lost one eye from hypopyon ulcer, the sac should be removed on the side of the healthy eye. Axenfeld[13] states that nearly 80 per cent. of cases requiring removal of the sac are in the working classes, and that in nearly 35 per cent. of cases of dacryocystitis permanent dense opacities of the cornea result.

3. If there is severe ulceration of the cornea with dacryocystitis, or even lachrymal obstruction, it is often advisable at least to incise the sac and drain it, but I do not hesitate to remove such sacs, even during the height of the inflammation, since ulcus serpens must be treated vigorously to prevent perforation and loss of the eye.

4. As a preliminary to operations requiring the opening of the eyeball where dacryocystitis is present. If the fellow-eye has been lost by postoperative infection, the necessity of such preliminary operation is imperative. If an immediate iridectomy is necessary for glaucoma, or if for any reason sufficient time is not allowed for healing of the wound before opening the eyeball, it is best, anyhow, to remove the sac completely. Sutures passed around the canaliculi or cauterization of them are poor substitutes for removal of the sac, which should at least be opened and drained if the patient will not permit removal.

5. In cases of chronic lachrymal obstruction without any apparent blennorrhea of the sac when normal drainage can not be restored, as in many cases of traumatic destruction of the lachrymal channels. In such cases it is safer for the eye to remove the sac, destroying completely the lumen of the remaining connecting channels, especially since it is impossible to know how soon an acute or chronic blennorrhea may replace the apparently simple obstruction and innocent, but often dangerous, epiphora. Tooke[8] pointed out that the presence of dacryocystitis is often disguised by a high crest on the lachrymal bone, preventing proper pressure on the sac, and sometimes by the increased pressure forcing the contents of the sac into the nose instead of into the conjunctival sac.

6. When lachrymal fistula is present.

7. In cases in which there is necrosis or disease of the bony walls of the canal.

8. A dilated or atonic sac should often be removed, the embracing fibers of the orbicularis being atrophied, and especially in long-standing cases with partial destruction of the walls of the sac and duct and in which probes have been employed.

9. In certain cases of polypus or when there is much thickening of the sac lining, sometimes indicated by a lumpy feeling after emptying the sac.

10. In debilitated or nervous persons or any who can not endure probing. de Schweinitz[14] considers it especially valuable in the insane.

11. In dangerous conditions, such as tubercle and malignant growths.

The various forms of operation have been fully described by Axenfeld,[13] Holmes,[9] de Schweinitz,[14] Tooke,[8] Evans,[12] Jocqs,[15] Arnold Knapp,[16] Parsons,[6] Lesshaft,[17] Kuhnt,[18] Syndacker,[19] and others. I prefer the subperiosteal method for removal of the sac as described by Axenfeld,[13] Snydacker[19] and de Schweinitz.[14] Since the fundus of the sac extends above the level of the internal palpebral ligament, great care must be used to see that every portion of it is completely removed. Parsons[6] asserts that absolutely no harm results from dividing this ligament. I find it easier to make a complete dissection when it is divided, the cosmetic result being just as good if it is properly sutured. My incision, to the bone, commences at the upper border of the internal palpebral ligament and extends downward and slightly outward for about 2 cm., just a little to the nasal side of the internal bony margin of the lachrymal fossa. The knife should point toward the ear of the opposite side. The specula stretch the tissue so that a 2 cm. cut is sufficient. There is no need of having a long cut below the internal palpebral ligament. It is easy to separate the periosteum from the inner side of the lachrymal fossa. After this is done, the sac should be seized with the forceps, pulled upward and cut off low at its junction with the nasal duct. It should then be dissected from below upward, severing the upper part last. For the first few days the wound should be disturbed as little as possible in order to avoid opening it.

One of the most troublesome parts of the operation is hemorrhage, especially if the incision has been made too far internally. If the angular vein is cut it should be ligated. I have attempted partially to overcome the hemorrhage by means of two simple specula, unlike

12. Brit. Med. Jour., Feb. 23, 1907.
13. Klin. Monatsb. f. Augenheilk, xli, 134.
14. Philadelphia Hosp. Rep., 1904-05.
15. Clin. Optalmo., January, 1906.
16. Arch. of Ophth., 1903, xxxii, No. 4.
17. Klin. Monatsb., August, 1906, xliv, ii, 256.
18. Cor.-Bl. d. allg.-artzl. Ver. v. Thuringer, Weimar, 1888, xvii, 635-644.
19. Chicago Med. Rec., Oct. 15, 1903.

those of Mueller and Axenfeld. The body of each is similar to Todd's tendon tucker, strong and light. They have no teeth, but a vertical plate with a lateral serrated edge to hold the tissues, and a smooth lower margin, which, pressed against the bone, greatly reduces hemorrhage. The larger one is first introduced and then the other so placed that they together expose a quadrilateral field for operation.

It is necessary to remove completely every portion of the mucous membrane, as otherwise a fistula may result, and it is equally necessary to slit the canaliculi and cauterize them in order that there shall be no blind pouch at the inner canthus in which irritating secretions may collect. Therefore, much depends on the technic and completeness of the operation. I prefer general anesthesia to local, for, while the operation may be done after deep injections of local anesthetics and adrenalin around the sac, it is not likely to be as thorough when it causes pain.

Removal of the lachrymal sac and, therefore, of the regurgitation of irritating, infectious secretions into the conjunctival sac, ultimately results in a healthier condition of the conjunctiva, and relieves the often attendant blepharitis, especially if helped by cleansing and slightly astringent solutions. In time this removes an irritation which probably causes a reflex oversupply of tears, so that soon, if there is no malposition of the lids, the supply of tears is no more than to compensate for their evaporation from the cornea, unless the eye is subjected to special irritation, such as cold winds or foreign bodies, or unless the epiphora is due to some of the non-obstructive causes enumerated by Carpenter.[20] Therefore, since the patient is generally relieved of the chief annoyance by removal of the sac, it would seem unnecessary always to remove the gland at the same operation, especially since at this time there is slightly greater danger of infection. Parsons[1] does not find it necessary to remove the gland after removing the sac, and says that its removal is uncalled for if sufficient time is given for the conjunctivitis to respond to treatment.

Unquestionably removal of the sac is often good practice, but the advisability of removal of the lachrymal gland, or orbital portion of it, in order to do away with a simple epiphora which annoys the patient only when exposed to special irritants, as cold winds, etc., and especially when there is no retention of pus or mucus with correspondingly less danger to the eye is a serious question, since in removing the gland the orbit has to be opened and exposed to the slight dangers of infection which can never be totally eliminated. While the other glands of the conjunctiva may ordinarily supply sufficient secretion for the eye, a flow of tears, aided by the movement of the lids, is unquestionably useful when needed in removing irritants from the conjunctival sac. If the removal of the sac has been thorough, and sufficient time is given for the conjunctiva to regain its normal condition, not being exposed to irritating regurgitations from the sac, there will not be much complaint of epiphora except, as before stated, when due to special irritations.

The removal of the accessory—palpebral—portion of the gland which supplies only a small part of the tears is not difficult, but is without much effect, since nearly all of the tears are secreted by the orbital portion. The removal of the latter portion is not so easily performed and is well described by Holmes.[19] I prefer a shorter incision extending along the orbital margin only 1.5 cm. above the outer canthus, but 0.5 cm. below it, since the gland is situated behind the outer margin of the orbit and not high up, as often thought. One or both lachrymal sac specula should be used to open the wound and reduce hemorrhage. An opening can then be made through the orbital fascia and the gland seized by a pair of forceps. It should first be separated on its outer side by blunt dissection. Then the dissection should continue downward and inward from the summit of the gland, cutting the ducts until the inner side is also separated, being careful not to perforate the conjunctiva, which would thereby increase the danger of infection.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

20. Carpenter: Trans. Sec. Ophth., Col. of Phys., Philadelphia, Jan. 17, 1905.

THE TREATMENT OF STRABISMUS IN YOUNG CHILDREN.*

ALBERT RUFUS BAKER, M.D.

Professor of Ophthalmology in the Cleveland College of Physicians and Surgeons; Oculist and Aurist to the St. Alexis and Cleveland General Hospitals.

CLEVELAND, OHIO.

Ever since Donders taught us the intimate relation between convergence and accommodation we have known that the rational cure of squint is an early correction of the error of refraction; but, owing to the difficulty of accurately correcting errors of refraction in young children, we have usually waited until the child was old enough to assist us by reading the test type. Then it is too late to cure the majority of cases, and we are obliged to resort to an operation, which has yielded fairly satisfactory results from a cosmetic point of view, but unfortunately it does not restore binocular vision, and in many cases the permanent results of the operations have been far from ideal, many cases later in life developing a divergent strabismus—a deformity greater than the original one. Indeed, it has come to pass, as Browne has well said:[1]

> We are all the inheritors of two legacies which unequally profit us, and though in our reasoning we aspire to be followers of Donders, it must be admitted that in our practice, we, from old custom, from want of knowledge and patience, and from convenience, do revert to the primitive view of the school of Diffenbach. We resemble those barbarians, who, converted to Christianity, prefer the orthodox theology and ethics, but who, under slight temptation, cast off their new religion and go Fantee.

As almost every child is hyperopic, therefore almost every one is potentially capable of acquiring convergent squint. There must be some exciting cause which in a few cases is quite apparent, such as paralysis, opacities of the cornea or lens, central chorioiditis, optic-nerve atrophy, etc. I have now under observation a bright 9-year-old boy, brought to me three years ago with a convergent monocular squint. In the squinting eye there is a small posterior polar cataract. The mother can not understand why spectacles do not correct the deformity in her child's eyes as it does in the eyes of her neighbor's children; but it is questionable whether even a tenotomy would improve the condition, and the cataract is so small that it would scarcely seem advisable to ex-

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Squint Occurring in Children," Bariliere, Tindall and Cox, London, 1904.

tract it. While such cases are always interesting and often baffle our best endeavors to remedy, yet it is not the management of such cases that I had in mind in the preparation of this paper. I intend, rather, to limit myself to a consideration of the ordinary concomitant squint in which both eyes are, excepting for the error of refraction, apparently healthy so far as we can determine ophthalmoscopically or otherwise. In many of these cases we have accepted the statement of the mother that the strabismus followed some slight illness, such as measles or whooping cough, or the eye was inflamed or injured, and a bandage applied, and when it was removed the eyes were crossed. Or it may be the child simply imitated another. It does seem sometimes, as Worth teaches, that there must be some congenital deficiency of the fusion sense and that a temporary suspension of binocular vision is sufficient to destroy it altogether. And to a certain extent these observations are correct, but any one who has observed the development of squint in a considerable number of young children must have noticed that squint is not developed so suddenly as we are sometimes led to believe, but that it comes on slowly. Many times the parents bring their children to the consulting room in doubt whether the child squints or not, and sometimes I have to keep the child under observation for a considerable period before a diagnosis can be made. If you have the opportunity of following a case closely it will be noted that at first the child squints only occasionally. And I believe that a more careful observation of the clinical history of these cases will show that there is first a period of occasional squinting, often lasting for weeks or months, and in a few cases for years; then a period of alternating squint lasting a greater or less period, finally terminating in a permanent monocular squint with deterioration of vision in the squinting eye.

Von Graefe,[2] as Donders says (p. 307), "puts it prominently forward as a well-known fact that persistent strabismus is very often, indeed, generally, preceded by an intercurrent or periodical squint."

Any one who has been long in ophthalmic practice can not doubt that there are many cases of spontaneous cure of squint, because patients later in life, when being tested for errors of refraction, pension, railroad or marine service, are so frequently found amblyopic in one eye, and volunteer the information that they squinted in early life. The persistence of the amblyopia in these spontaneous cases of recovery would suggest that the amblyopia was congenital and not ex anopsia. And yet the longer I watch these cases the more I am impressed that much of the failure in vision is the result of suppression of vision in the squinting eye and may be restored by use.

I have now under observation a man of 28 years of age with monocular squint who lost the seeing eye last September from an injury. He could only count fingers at three feet. He now sees 20/200, and the vision is still steadily improving. Another squinting patient, 34 years of age, in the same ward on the same day, lost the vision of the seeing eye from an injury. At first I could not decide whether he had light perception or not, but his vision has improved to counting fingers at six feet and he now gets around the hospital alone. I believe his vision in the squinting eye would improve faster if it were not that he still has some light perception in the injured eye.

The age at which squint first appears has a most important bearing on the treatment. Worth[3] presents some interesting statistics of 1,017 cases of monocular squint; it appeared, beginning in each each year of life, as follows:

Before one year	134 cases.
Between one and two years	186 cases.
Between two and three years	247 cases.
Between three and four years	189 cases.
Between four and five years	113 cases.
Between five and six years	73 cases.
After six years	75 cases.

It will be seen that nearly 75 per cent. developed before the fourth year. In 178 alternating cases more than 53 per cent. were noted before the end of the second year; thus it will be seen that if treatment is to begin, as I believe it should, with the first appearance of the squint, we must commence very early in life. Formerly I thought two years was as early as we could hope to profitably fit spectacles to children, but in recent years I have in a number of cases given spectacles to children between 1 and 1½ years of age, and in a few instances under 1 year, and the results in these very young children have been so satisfactory that I shall not hesitate to use them more frequently in the future. I have had occasion many times to assure parents and general practitioners, who have questioned the wisdom of prescribing spectacles to children so young, that any child old enough to squint was old enough to wear spectacles.

As observed above, the development of squint in young children is at first occasional only; then it becomes alternating and later monocular. The propitious time to treat these cases is during its first appearance, when it is only at times that the eye is noticed to converge, either when looking at close objects or when tired, sleepy or embarrassed. Often the use of atropin for a few days in both eyes will effect a cure. If it does not, the child's eye must be carefully tested for errors of refraction and spectacles prescribed at once, which will most assuredly correct the tendency to squint. If the child declines to wear the spectacles prescribed, it is evident the lenses are wrong or the frame is not carefully adjusted.

If the case has gone on to the second stage, and there is a more or less constant alternating squint, almost equally good results will be attained if the error of refraction is corrected. If the squint persists after the spectacles are ordered, it may be necessary to use atropin in both eyes for a few weeks. There are a few cases in which the squint under the use of atropin will be increased for a time; doubtless the child makes increased effort of accommodation in order to overcome the blurred vision, but a continued use of the atropin will overcome this increased convergence.

In older children who have a persistent alternating squint, we will be obliged to resort to efforts to train the fusion sense, and this may demand great patience on the part of the surgeon. The stereoscope and the amblyoscope will aid us much. The temporary use of prisms or decentered lenses will help a little. The long-continued use of atropin and avoidance of all close work for the eyes will be of great service. These children must be taken out of the kindergarten; driving and playing out of doors will be of much service. If after months and years of trial there is no improvement, an operation to partially correct the convergence may be necessary. In a few of these cases I have failed to secure binocular vision, but a fairly good cosmetic result has been obtained in almost all of them.

2. Arch. f. Ophth., i, 1, 17.

3. Squint, London, 1903.

Unfortunately many of the cases that come to the ophthalmic surgeon for relief have already passed on into the third stage of persistent monocular squint, with more or less amblyopia of the squinting eye. These cases will demand our best endeavors, and not infrequently baffle our efforts to restore binocular vision. Occasionally, however, we will be rewarded, even in apparently hopeless cases, so an effort should be made in every case to restore binocular vision. My notes show many cases of persistent monocular squint of many years' duration in which I have succeeded in restoring binocular vision and thus securing a perfect result.

In every case the most careful and painstaking correction of the error of refraction must be made. I have, as the years go by, become more and more convinced of the necessity of fully correcting the error of refraction. If the patient rejects the full correction, use atropin in both eyes until he will accept; then use the atropin in the fixing eye until you are convinced that no improvement can be hoped for in the vision of the squinting eye; how long this should be must be left to the judgment of the ophthalmologist; it may be weeks, it may be months, it may be years. Of course, the use of the atropin should be discontinued from time to time to see what the effect will be. The occlusion bandage should be given a trial in all cases, but in my experience it often proves unsatisfactory. In hopeful cases the vision will improve and this eye become the fixing eye, and thus the case will change from a monocular to an alternating squint, and should then be treated accordingly.

It is not my purpose to enter into a discussion of the operative treatment of these cases, except to say that I do not often find it necessary to operate on children under 10 years of age. Generally speaking, I prefer an advancement to a tenotomy, or a combination of both, but when I find it necessary to operate on younger patients I prefer a tenotomy, only attempting to correct a part of the deformity. I never perform an operation on a patient in whom the squint disappears when the spectacles are worn and returns when they are left off.

I believe the only practicable way to correct the errors of refraction in young children is by retinoscopy, and that it is utterly impossible for any one to successfully treat these cases who is not an expert in the use of the shadow test. I endeavor to use the ophthalmometer in all cases, but must confess that it has proved of little service in these young children.

It was my intention in preparing this paper to report a number of illustrative cases, but, on more mature consideration, I thought I could attain my object just as well by stating as briefly and concisely as possible my own method of treating these cases in private practice. For twenty years I have followed the methods here outlined, and it has been in exceptional cases only that I have been obliged to resort to an operation. In almost all cases when seen early I have secured binocular vision and almost perfect orthophoria, or at least with no more heterophoria than in a like number of non-squinting children. In older children—that is, those over 5 or 6 years of age—I have not been as successful, but even in these children I have succeeded in correcting the deformity in the majority of cases, and in a fairly large percentage have succeeded in restoring binocular vision.

I wish to urge those of you who do not treat your patients in this way to give the method a thorough and conscientious trial, and I am sure you will come to look on the operative treatment of strabismus as an evil necessary to be practiced only as a last resort. In my practice I look on the operation as a confession of defeat, and when obliged to make a tenotomy I have much the same sensation as when I have to enucleate an eye after having successfully removed a foreign body.

636 Rose Building.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

THE TECHNIC OF APPENDECTOMY.*

JOHN A. WYETH, M.D., LL.D.
NEW YORK CITY.

I deem it my duty to acknowledge before this scientific body the obligation under which all mankind, professional or non-professional, has been placed by that brilliant galaxy of men who were the pioneers in the establishment of this great operation. To Kroenlein, who in 1884 did the first appendectomy,[1] placing a double ligature (material not stated) on the base of the appendix, which was removed, with fatal result;[2] to Dr. Reginald H. Fitz, of Boston, who in 1886 published his classical article on this subject; to the late Dr. Richard Hall, of New York, who in May, 1886, in that city, did a successful appendectomy, ligating the stump with a catgut ligature; to the late Prof. T. G. Morton, of Philadelphia, who operated on the first case for which the diagnosis had been made and operation done with the intention of removing the appendix, in which the stump was tied with a silk ligature and the patient recovered; to Dr. Simon Baruch, of New York City, who in 1887, after an experience based on postmortem examinations, diagnosed a case of appendicitis in a boy 11 years of age and succeeded, after much insistence, in persuading the late Dr. Henry B. Sands to operate directly for this disease;[3] to Dr. Charles McBurney, whose name is associated with one of the surgical approaches to this organ, and to Dr. John B. Deaver, of Philadelphia, who has demonstrated the great advantage of the route through the rectus muscle, the "Deaver incision."

It would seem that in the twenty years which have elapsed since this operation was introduced, with the experience gained by thousands of operators in a list of cases running into the hundreds of thousands, there should have been evolved an accepted technic. Such is not the case. The methods are legion. Surgeons do not differ from the rest of mankind in their susceptibility to fads and fancies. They are well within the purview of that piquant criticism by the author of Don Juan, who says:

> Man's a strange animal, and makes strange use
> Of his own nature, and the various arts,
> And likes particularly to produce
> Some new experiment to show his parts;
> This is the age of oddities let loose.

In my opinion the following technic should be accepted: The incision is at least four inches long, par-

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1. Dr. W. Grant, Denver, in January, 1885, in an operation for the relief of fecal fistula resulting from appendicitis, tied the appendix near the cecum and divided it beyond the ligature. He did not remove the appendix, which was buried in adhesion behind the peritoneum.

2. Archiv. f. Klin. Chir., 1886, 516.

3. In this case Dr. Sands contented himself with disinfection of the area immediately about the perforated appendix, and closing the perforation with three interrupted silk sutures without removal of the appendix.

allel with the fibers of the right rectus muscle about one inch toward the linea alba from the right edge of this muscle. The center of this incision should be one-half inch below an imaginary line drawn from the umbilicus to the right anterior superior spine of the ilium. The anterior sheath of the rectus is opened on this plane, a pair of dull-pointed half-curved scissors carried between its fibers until they come in contact with the posterior sheath when they are turned crossways and the blades sufficiently opened to separate the muscular fibers. In this opening a finger is inserted, and with it the separation is completed in the length of the incision.

Any nerve filaments crossing the line of separation may be held apart by gentle traction, but not divided unless absolutely necessary. Retraction with dull-pointed instruments will expose the posterior sheath and bring into view branches of the inferior epigastric artery and vein. When possible these should be avoided, but when they cross the line of the posterior incision they should be secured with two forceps, divided between and tied with small plain catgut. All bleeding should be arrested before the peritoneum is incised. The posterior sheath and the peritoneum are now opened in the general direction of the anterior incision, but for not more than one inch. The posterior sheath may be sufficiently developed to be opened separately, or it and the peritoneum may be divided together.

With a long, half-curved Hagedorn needle, two linen or silk (No. 2) sutures are passed (one on either side) from within out through the peritoneum and rectus muscle, one-half inch from the edge of the incision, and tied in long loops for retraction. The bowl of a spoon, convex surface toward the cecum, may be used to prevent the possibility of injury to the bowel or omentum.

The omentum which is usually encountered should be carefully displaced toward the median line, and any overlying loops of small intestines similarly displaced. In certain instances this may be facilitated by half turning the patient on the left side. If through this small peritoneal opening the operation can not be thoroughly accomplished without unnecessary manipulation, it should be enlarged upward or downward as indicated. In my opinion a free incision is much less harmful than the rough handling which is often necessary in separating adhesions and bringing the appendix through a small aperture. When, however, the appendix presents favorably, a small opening is preferable. When, as not infrequently occurs, it is not readily located by the touch it may be found by following downward the longitudinal band so easily recognized on the anterior wall of the colon and cecum. This band terminates in the appendix.[4]

The end of the cecum with the appendix and mesoappendix attached should be brought through the peritoneal opening, but no more of the cecum exposed than is necessary to complete the operation of tying off the mesoappendix with two or three separate loops of plain catgut ligature, and of tying with a No. 2 silk or linen thread the organ to be removed. The mesoappendix is now divided between the ligatures and appendix, the end of which is held directly upward until it may be clamped by an artery forceps one-half inch from its junction with the cecum. A No. 2 silk or linen ligature is now thrown around the appendix one-quarter of an inch from the cecum and so tightly tied that there can be no possible chance for it to slip. The operator should be sure that the first knot holds firmly while the second is being secured. As soon as this is done and before the ends are cut away a gauze swab split half way with the scissors is carried on either side of the stump, and with this the operator firmly holds the cecum. The appendix is divided with the curved scissors one-quarter of an inch beyond the ligature. The presence of the gauze prevents the possibility of infection.

The funnel-shaped end of the stump is now thoroughly disinfected with a drop of pure carbolic acid carried upon a wisp of cotton on a small probe; the point should be carried to the apex of the funnel and rotated until all the surfaces are cauterized. One or two drops of alcohol are applied in the same way to neutralize any excess of the acid. The stump should be thoroughly dried, the silk ligature divided one-quarter of an inch from the knot, the swab removed, and the cecum permitted to drop back to its normal position. When the removal of septic exudate or fluid is necessary the peritoneal incision should be larger.

If the operation be clean the omentum should be brought again to its normal position in front of the cecum and the peritoneal wound closed by a running suture of No. 2 catgut. This part of the technic is greatly facilitated by making upward traction on the silk loops so as to lift the peritoneum away from the protruding mesentery. When the peritoneum is closed the retractors are removed and the separated muscle permitted to resume its normal position, where it maintains itself without suture. The anterior sheath should be closed with a running suture of kangaroo tendon. If there be a superabundance of fat a subcutaneous running suture of No. 2 plain catgut is advisable for its approximation. A subcuticular suture of silkworm gut should close the anterior incision.

Preference is given the Deaver incision because it offers free access to the cecum and appendix, and when, as is not infrequent, it becomes necessary to have more room for safe and thorough work, it can be extended indefinitely upward or downward, giving complete command of the peritoneal cavity with the minimum of risk of being followed by ventral hernia. The closure of the posterior sheath and peritoneum, the strong muscular splint which guards this posterior incision, together with the firm union which can be obtained in the anterior sheath, makes a ventral hernia a rare exception. I prefer it to the Kammerer method, which, making the same anterior and posterior incision, displaces temporarily the right edge of the rectus toward the median line. My chief objection to this latter incision is that when drainage is found to be necessary the muscle, resuming its normal position, forms a trapdoor over the posterior opening. Both are preferable to McBurney's incision for the reason that it can not be sufficiently enlarged to meet an emergency without great danger of ventral hernia.

From the incipiency of the purse-string suture or any technic which required the insertion of sutures in the walls of the cecum, I have opposed the operation by these methods, because they seemed to be a violation of an important principle in surgery, viz.: *The minimum of traumatism the maximum of safety.* Any suture method requires more handling of the intestine than the simple ligature and more exposure of the cecum. Puncture of the walls of this organ at various points with the needle which carries the suture incurs the un-

4. A few instances are on record in which operators of large experience after prolonged search have failed to find the misplaced appendix.

necessary danger of perforating a blood vessel, or it may be the lumen of the intestine itself.

Hearing of several accidents, I determined to inquire as to their frequency and the results. I regret that I have been unable to obtain the particulars of a number of cases in which I have been informed accidents occurred, but the following, for which I am profoundly grateful to the courageous and honest men who have consented to publicity, must be of interest in treating on this subject:

A distinguished professor of surgery of large experience and wholly reliable writes me that he has abandoned the purse-string suture and, while in his own practice he has never had a secondary hemorrhage after appendectomy, he has known of at least a dozen accidents, some of which were fatal, in the several hospitals with which he is connected, following one of the fancy methods of dealing with the appendix.

Dr. John B. Deaver, whose practical experience in appendectomy is second to that of no operator, living or dead, has reported to me personally two cases of hemorrhage into the bowel after the use of his bipolar suture. In this operation the appendix is clipped off close to the level of the cecum and the stump is rolled in and held inverted by two rows of silk or linen sutures passed through the peritoneal and muscular layers of the bowel. Dr. Deaver says further:

I approve highly of your method of disposing of the appendix stump and also the mesoappendix; I have never seen bleeding follow the purse-string suture, yet I do not say this does not occur. Furthermore, I agree with you that the safest procedure is ligature of the appendix.

Before the Chicago Medical Society, on Oct. 17, 1906, Dr. William Hessert reported three cases of hemorrhage from the stump following appendectomy; two of these were interval operations, in the third the appendix was only moderately inflamed.

Case 1.—*History.*—Female, aged 13. Operation during the first twenty-four hours of a mild attack. Mesoappendix ligated with catgut and divided. Appendix clamped with artery forceps at its base and cut away. Purse-string suture around base; appendix inverted and purse-string tied. Over this another row of Lembert sutures. The patient's condition was excellent for twelve hours. At this time blood escaped per rectum, with signs of acute anemia and moderate shock. She lost some blood for two days, when hemorrhage ceased and patient finally made a good recovery.

Case 2.—*History.*—Female, aged 25. In the course of a pelvic operation of short duration the appendix was found to be five inches long and to contain two large enteroliths. Appendix removed by the method just described. The patient did well for about twelve hours, when she went into profound collapse, followed by the passage of a large amount of blood per rectum. She died in thirty-six hours in spite of the most heroic efforts to save her life.

Case 3.—*History.*—Male, aged 23 (interval operation). Appendix posterior to cecum, with no mesoappendix. Purse-string suture around base and extra loop passed around what corresponds with the cecoappendix angle, and an extra row of Lembert sutures. About the same time after operation as in the preceding cases, blood appeared per rectum and showed itself for about thirty-six hours. There was some shock and signs of acute anemia. Recovery.

In the discussion which followed Dr. D. W. Graham reported a case of hemorrhage from what he believed to be a stump of the appendix, since in clearing out the clots a catgut ligature still tied was found, which seemed to be the one that he had placed around the base of the appendix.

It is not surprising that accidents should follow the ligature of the stump of the appendix with catgut, either plain or chromicized. I consider the use of catgut, either chromicized or plain, for tying off the appendix as unsafe. Dr. F. B. Lund, Boston, reports:

For two years in a large number of cases I had practiced inversion of the stump after crushing and carbolizing, using a purse-string suture of linen thread. Last summer I operated in that way one Saturday morning, and went into the country for Sunday. The next morning at 7 o'clock I received a telephone call that my patient had a pulse of 120 and had had a bloody stool. At 9 a. m. I found she had passed a large bedpan full of blood and clots, and was pale and anxious, with a pulse of 120. I etherized her, reopened the wound, removed the suture and untied the stump, which had stopped bleeding, but was full of clot. I tied it with catgut, turned it in, closed the wound and the patient recovered.

Dr. Lund concludes:

No more purse-string sutures for me, without previous ligature of the stump, or at least of the artery. One experience of this sort is quite sufficient.

Dr. Morgan D. Hughes, Branchville, N. J., writes:

M. D., aged 58, was operated on January 18, thirty-six hours after commencement of attack. Kammerer incision, splitting anterior sheath near right border, displacing rectus inwardly. On opening the peritoneum I found a gangrenous appendix, not walled in. Peritoneum deeply injected over cecum and adjacent parts. I removed the appendix, cauterizing the stump with carbolic acid and alcohol, and invaginated, using purse-string suture of chromicized catgut reinforced by additional sutures of plain catgut. Cigarette drain from stump out through incision. On removing drain at end of forty-eight hours I detected a fecal odor, and on the third day there was a discharge of liquid fecal matter, which continued for several weeks. The drainage was unsatisfactory on account of the overlapping of the posterior incision by the rectus muscle. It became necessary to open the wound and hold the muscle toward the median line by a carefully inserted pack, in order to secure drainage. The discharge of fecal matter gradually ceased and the patient recovered. The wall of the cecum was not in any way involved in the gangrene which affected the appendix. I can account for the fecal discharge only by the giving way and inefficiency of the purse-string suture.

Dr. E. A. Halstead, Chicago, reports two cases of severe hemorrhage following appendectomy:

Case 1.—*History.*—E. K., male, aged 31 (interval operation). Employed the purse-string silk suture about the base of the appendix. The mesoappendix was tied off with fine catgut, followed by crushing of the base of the appendix and subsequent ligature of the crushed segment with No. 2 catgut. The stump was invaginated while the purse-string silk suture was tied. The gut was replaced and the abdominal wound closed. About ten hours later the patient passed one and one-half pints of blood from the rectum; two hours later there was another evacuation, consisting of liqid feces and blood; the amount of blood in this was estimated at about 15 ounces. There followed evidence of acute anemia. These passed off and the patient made a complete recovery.

Case 2.—*History.*—Female, aged 12. Operation March, 1902, during the first twenty-four hours of acute appendicitis. Appendix acutely inflamed but intact; it was easily found and removed. The technic was the same as in the preceding case, with the exception that the suture was No. 2 pyoktanin catgut, instead of silk. Colon was filled with fecal masses. For forty-eight hours the patient did well; at the end of this time a large dose of castor oil was administered; in about four hours this was followed by severe abdominal pain, vomiting and a rapid rise in the pulse and temperature. The patient's condition became rapidly alarming and death followed at the end of seventy-two hours. The autopsy showed general suppurative peritonitis; the catgut purse-string suture had untied and the ligature slipped from the base of the appendix.

Dr. W. G. Nicholson, Green Bay, Wis., reports a fatal case of hemorrhage which took place seven hours after the operation. Postmortem examination showed hemorrhage had come from the cut end of the appendix. The colon was full of clotted blood. The method was as follows:

The appendix was clamped and cut off one-fourth inch beyond the clamp; the end of the stump was disinfected with pure carbolic acid, followed by alcohol. The open end of the stump was closed by stitches and then inverted by using a purse-string suture of linen.

Dr. Ernest LaPlace, Philadelphia, reports two cases of hemorrhage after using the inversion method of treating the stump after appendectomy. In these cases the stump was inverted with two rows of superficial sutures passed through the cecum around the inverted stump. In each of the two cases reported the hemorrhage showed itself about four hours after the patient had been returned to bed and continued several hours thereafter. On the first indication of hemorrhage the wounds were opened, sutures removed and a ligature was placed about the bleeding artery found below the mucous membrane of the stump. In neither case was there found blood in the peritoneal cavity.

Dr. George R. Fowler states:

The possibility of the existence of a sufficiently large vessel in the wall of the appendix, from which hemorrhage might occur, suggested itself to me early in the use of Dawbarn's method, and this was verified by experience later.

The case in question had four hemorrhages of bright red blood, sixteen ounces in all, besides several large clots, which told markedly on the condition of the patient, but which fortunately responded to the administration of opium. Careful examination of the rectum failed to reveal any cause for the hemorrhage, and Fowler concluded that the bleeding came from the appendicular artery.

Dr. Seelig in his paper[5] continues:

I assisted at an operation followed by similar disagreeable hemorrhages. The case was operated on by Dr. Charles Elsberg, Mt. Sinai Hospital. Dawbarn's method of complete inversion of the stump was done. Twenty-four hours after the operation the patient complained of intense abdominal cramps. An enema was given, followed by the expulsion of about eight ounces of bright red blood and numerous clots. There were no hemorrhoids or other rectal lesions. Pulse 118 to 128. Twenty-four hours later another discharge of blood from the rectum. Under opium, with absolute quiet, the hemorrhage ceased.

This author also states that Dr. Charles Mayo, of Minnesota, reported to him an operation in which the base of the appendix was crushed with an enterotribe before inversion, and that thirty-six hours after operation the patient began to pass copious, bright red bloody stools, as a result of which the pulse ran up to 150 beats per minute. The symptoms, although alarming for forty-eight hours, entirely responded to treatment. Dr. Mayo explained the hemorrhage on the basis that some branch of the appendicular artery had not been ligated.

Dr. Van Buren Knott, Sioux City, Ia., reports two cases of postoperative hemorrhage in the practice of other surgeons, following the use of the purse-string suture in the treatment of the stump. He writes: "I was asked to operate on both of these cases, and did so with one recovery and one death." Dr. Knott has performed the operation of appendectomy in nearly 1,500 cases, and invariably employs the silk ligature to the stump.

5. Ann. Surg., November, 1904.

If any such record of accidents have followed the silk or linen thread ligature to the stump I have been unable to discover it. I have used it in every appendectomy I have performed and it has never failed. It is, in my opinion, the safest and surest method of occluding the stump with the least possible traumatism.

[For the discussion, see the department of Section Discussions in this issue.]

GALL DUCT OBSTRUCTION CAUSED BY MOVABLE KIDNEY.*

MARTIN B. TINKER, S.B., M.D.
Lecturer on Surgery, Cornell University Medical College.
ITHACA, N. Y.

The association of biliary tract affections with movable kidney has received but little notice in American medical literature, in spite of great activity in abdominal surgery in this country in recent years. The condition is, I believe, not especially rare or unusual, but of relative frequency. In contrast to the infrequent mention of gall-tract affections in association with movable kidney, gastric and intestinal indigestion have been frequently mentioned in this connection. The relation between certain cases of appendicitis and movable kidney has also been emphasized by Edebohls and others and appropriate surgical treatment recommended.

That extreme renal mobility should cause appendicitis in some cases, gastric disturbance in others, and not affect the near neighbors of these organs, the gall bladder and biliary ducts is hardly conceivable. That such obstruction actually does occur, I have had opportunity to observe in two cases during the past four years, in which severe, repeated attacks of pain characteristic of biliary obstruction were entirely relieved by fixation of a movable kidney which was pressing on the gall ducts.

Clinicians all recognize the fact that abdominal symptoms may be traceable to pathologic conditions in any one of many organs within or without the abdominal cavity, and abdominal operations frequently fail to give expected relief by reason of the fact that though one pathologic condition is corrected, another equally important factor is overlooked. My purpose, rather than to detail histories of cases, is to emphasize this important principle in abdominal surgery; that when several factors contribute to the patient's ill health all should if possible be corrected.

This principle has frequently been insisted on, as it concerns the gall bladder and stomach, the stomach and movable kidney, the bile tracts and pancreas, but has received slight attention in connection with the question of gall-tract obstruction from movable kidney. Several factors contribute to make it easy to overlook the relation of these two conditions. First, the relatively numerous cases of movable kidney which cause no symptoms make us less inclined to look on it as a source of trouble, particularly when the symptoms are referred to other organs. Second, gallstones may be present, which might readily be looked on as the cause of symptoms of obstruction, though the gallstones themselves might easily have formed as the result of interference with the free flow of bile by pressure from the displaced kidney. But most important of all is the likelihood of overlooking

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

abnormal mobility, because the kidney slips up into normal position when the patient is examined in the recumbent position.

In two patients who have come to me for operation the condition had been unrecognized and untreated for many years.

Case 1.—*History.*—Clergyman, aged 32, married. For six years previously patient had been in poor health and his condition gradually became worse. He had been troubled with indigestion at times, had had attacks of nausea and vomiting, which about the time I saw him had been very frequent, almost every day. An examination of the stomach contents did not show anything radically wrong with the gastric secretions. On several occasions he had had severe pain located exactly in the region of the gall bladder below the right costal margin; he had never passed gallstones; he thought his stools were somewhat whitish, but not clay color, pasty nor especially offensive. Urine was not usually high colored, and was normal in amount. Had been slightly jaundiced on one or two occasions. At times he had had severe pain in the right side well over toward the loin. Never any pain in the appendix region. He was constipated.

Physical Examination.—Large boned, tall man, well developed but poorly nourished. Skin sallow and pale; mucous membrane, good color. Tongue had a rather thick, whitish coat. Heart and lungs negative. Urine negative. Abdomen absolutely negative except that there was tenderness on deep pressure beneath the right costal border. The abdomen was very flat. Costal and iliac grooves deep. Abdominal muscles apparently well developed. On percussion an area of dulness extended downward three fingers' breadth below the right costal margin in the region of the gall bladder. There seemed to be normal fulness in the region of the right kidney; no tenderness on pressure there. When outlined by percussion the stomach seemed to occupy its normal position. Patient was told that his illness had been of such long duration and medical means had been so thoroughly tried that operation seemed to promise the best prospect for cure in his case.

Operation.—A cholecystostomy was performed Aug. 27, 1903. Ether anesthesia. Abdomen opened by rectus incision. The gall bladder came at once into view. It was considerably distended, coat somewhat thickened, no gallstones felt in it or in the ducts. While the region of the gall bladder was being explored a firm, rounded, movable mass was felt in that vicinity, which proved a very movable right kidney. The kidney could easily be drawn past the median line of the abdomen. It pressed in the region of the bile ducts and pyloric end of the stomach and seemed the probable cause of the symptoms referable to the gall bladder from which the patient had suffered. Kidney could readily be replaced into its normal position. Because of the undoubted symptoms referred to the gall bladder it was stitched into the wound with a continuous suture of fine chromicized catgut, but was not opened. The abdomen was closed with continuous heavy catgut sutures of peritoneum and posterior rectus sheath, interrupted heavy catgut suture of rectus muscle and continuous heavy catgut sutures of anterior rectus sheath. A small opening was left in the region where the gall bladder was sutured to the parietal peritoneum in the wound. Two fine black stay sutures were taken in the portion of the gall bladder stitched into the wound to locate the position for opening the organ later. The wound was dressed with silver foil, covered with sterile cotton, which was painted down with collodion. Some sterile gauze was put on over this, which was held in position with broad adhesive straps. Patient was then turned on his left side. An incision was made beginning just below the last rib in the region of the anterior border of the quadratus lumborum muscle, extending downward and forward obliquely. The peritoneum covering the kidney was exposed. There was a deep hollow in the region which should normally be filled with kidney fat. By making pressure on the abdomen in front the kidney could be pushed up into position. The fat was grasped with forceps and drawn up into the wound, dragging with it the kidney. The fatty capsule in this case was poorly developed. The fibrous capsule of the kidney was then seized. It stripped very readily from the kidney. An area about 3 cm. square was exposed, and by the fibrous capsule the kidney was drawn up still further into the wound. The fibrous capsule was stitched to the erector aponeurosis of the muscles by interrupted chromicized catgut sutures. The aponeurosis of the muscle was closed with a continuous catgut suture and the skin was sutured subcutaneously with silver. Foil dressing. Heavy cotton pads used to protect both wounds. Tight abdominal bandage applied. During the gall-bladder operation a small sandbag was used under the back to bring the spine up and render the exploration of the gall ducts less difficult, following suggestion of Mayo Robson. Heavy sandbag was used under the right side during fixation of the kidney in place of an Edebohls bag. During the abdominal operation the patient was not well under anesthesia a large part of the time, and considerable difficulty was experienced in making a satisfactory closure. Patient took his ether well.

Postoperative History.—Gall bladder opened the day following operation and bile, the consistency of partially dried mucilage, discharged. Drainage was free for a week, but then ceased and the wound rapidly closed. The sutured parts of both incisions closed by first intention. Convalescence was uneventful and patient rapidly improved in health, and has been entirely free from his former symptoms for over three years.

Case 2.—*History.*—Married woman, aged 48. For many years she had had attacks of pain of greater or less severity in the region of the gall bladder. There had also been a good deal of pain in the back, considerable digestive disturbances, never jaundice nor high colored urine; a number of years ago had an attack resembling gallstone colic. Two analyses of stomach contents showed absence of HCl and presence of lactic acid. Patient had not been troubled with nausea and vomiting, had not been losing weight; in fact, had gained in flesh considerably.

Operation.—April 7, 1906, operation was performed under ether anesthesia. An incision was made over the outer part of the rectus muscle from costal margin to umbilicus. On opening the abdomen the omentum was found adherent to the abdominal wall in the region of the gall bladder. It was not adherent to the gall bladder, however. The gall bladder seemed to be in perfectly normal condition, not enlarged, walls not thickened, surfaces showed no signs of inflammation. It was not considered justifiable to drain the gall bladder. On separating some deeper adhesions, which were found near the pyloric end of the stomach, the right kidney was found lying just to the right of the median line, and in a position to press on the duodenum, pyloric end of the stomach and gall ducts. The adhesions were separated and the kidney was pressed back into normal position. The stomach was explored and found apparently perfectly normal. On examination of the appendix, a good-sized concretion was found near the tip and the appendix was excised. The abdomen was then closed. The patient was turned over on left side and face and an incision was made over the kidney from the costal border to the crest of the ilium. The layers of muscle were separated, the kidney fat exposed, seized and the kidney drawn up into the wound. The fat was stripped from the surface over the kidney and pushed downward and toward the median line. The capsule was then divided over about two-thirds of the free border of the kidney and stripped off for a short distance. It was attached to the fibrous tissue just below the twelfth rib and also the muscle in the region of the wound with catgut sutures. The muscles were then closed in layers with interrupted catgut stitches. After placing an iodoform and split rubber tube drain down to the exposed surface of the kidney, the skin was then closed with subcutaneous silver stitch. The operation was necessarily considerably prolonged, but the patient left the operating table in very good condition.

Postoperative Note.—Patient was placed with head of the bed elevated. She suffered little from nausea and vomiting, but had considerable pain during the first two days. There was also considerable distension, which was promptly relieved by the use of turpentine enemata and stupes. Both wounds healed by first intention and further recovery was un-

eventful. Patient was able to take an extended trip through California, taking in the Grand Cañon and Yellowstone Park *en route*, the summer following operation. Pain relieved and digestion improved a year and six months after operation.

Very little has appeared in the literature on this subject. Cordier has reported six cases in which gallstones were associated with movable kidney due, he believes, to compression of the common duct. Von Tischendorf performed nephrorrhaphy in one case on the peritoneal side after an operation for biliary calculus with a successful result. Apolant believes that there are many cases at Carlsbad whose symptoms are due to movable kidney, but are wrongfully attributed to biliary tract lesions. I am not aware that any patients presenting the same conditions occurring in the cases I have reported have been treated surgically, though there may be several physicians who have had a similar experience.

Next in importance to the diagnosis I should place the method of fixation adopted, for it is well known that there are many recurrences of mobility after nephropexy. I prefer the muscle splitting incision for exposure of the kidney. The surrounding fat should be entirely separated away, otherwise firm adhesion will not be secured. Attachments to the colon should be freed or the kidney will be dragged on when the intestines are full. As the kidney capsule is the only part of the organ tough enough to hold stitches with certainty, I am accustomed to separate it from about two-thirds of the convex border and suture to the aponeurotic structures in the incision. A loop of gauze made of two pieces, sutured together with catgut to facilitate removal, passed around the lower pole of the kidney, aids in holding the kidney in place and in forming firm adhesions. The patient should be kept on the back or right side for the first ten days or two weeks after operation. With this technic, I believe there will be no trouble about recurrence of mobility.

In presenting this brief paper it has been my endeavor not to exaggerate the frequency or overestimate the importance of gall-tract obstruction from movable kidney. It is certain that the subject has seldom been mentioned in the literature and that such cases have been overlooked on the operating table, occasionally at least. If we are always to give our patients the degree of relief which they confidently expect when they consent to abdominal operation we must recognize and correct all causes of trouble within the abdomen, whether of frequent or infrequent occurrence.

[For the discussion, see the department of Section Discussions in this issue.]

ABDOMINAL SYMPTOMS OF THORACIC DISEASE.*

ALLEN A. JONES, M.D.
Adjunct Professor of Medicine, University of Buffalo.
BUFFALO, N. Y.

Acute pleuritis is sometimes accompanied by pain referred to the hypochondriac region of the affected side, and a peculiarity of the pain is its constancy. It is not felt merely on deep breathing, nor more severely on inspiration, as is so commonly the case with pleuritic pain in the nipple region. Exertion and cough, however, are prone to accentuate it, and it may cause more or less grunting respiration. I recall one case of severe epigastric pain caused by diaphragmatic pleuritis in which cough was absent, and in such a case it is difficult to arrive at a diagnosis at the onset of the disease, time and developments being necessary to determine the real nature of the affection. The abdominal pain that is present in some cases of lobar penumonia, however, is particularly striking in its deceptive characteristics. Last autumn I observed two cases in which the onset of the disease was attended by extreme pain in the region of the gall bladder, indeed, cholecystic disease was seriously considered until there appeared physical signs sufficient to call attention particularly to the lower lobe of the right lung. There was no chest pain proper, but, on the contrary, the pain radiated downward from the region of the gall bladder. The disease was not ushered in by a distinct chill nor was the temperature high, and the early diagnosis was further confused by the absence of cough. The respirations were only moderately increased at the beginning. One of these patients was a woman 80 years of age, and there was felt in the right hypochondrium a mass suggesting a dilated gall bladder. Her leucocytes were high, 30,000, and death ensued in a few days. The other patient was a woman of 47 years who was, and had been for ten years, practically bedridden with arthritis deformans. In her case also at the onset of the disease the liver was by palpation and percussion found abnormally below the free border of her ribs. Her leucocytosis was only 18,000 and she also died after a short illness.

Not only may the pain of lobar pneumonia be felt in the epigastrium or hypochondrium, but in rare instances it may be present in one of the inguinal regions. If in the right iliac region the disease may simulate appendicitis so closely as to render some difficulty in diagnosis. In illustration of this point I may cite a case occurring in the practice of Dr. DeLancey Rochester. He was called to see a boy, whom he found with a moderate elevation of temperature, and pain, tenderness and rigidity in the right iliac region. There was constipation, coated tongue and an absence of other symptoms ordinarily attending the onset of pneumonia. Surgical consultation was had, the boy was removed to a hospital, and a normal appendix was removed. The temperature rose, and within the following twenty-four hours the physical signs of pneumonia of the lower right lobe developed. In this instance the early absence of cough and chest signs, coupled with the distinctive manifestations of disease in the right iliac region, led to the adoption of the course related. Leucocytosis, while not often high in early appendicitis, yet reaches a figure that might well accompany pneumonia, and if a high leucocytosis were present in such a case it would not draw attention from the appendix as the seat of the disease. It must be admitted that the symptom-complex in Rochester's case would prompt most alert physicians to advise prompt operation. The case, however, emphasizes how distant from the seat of trouble may be an abdominal symptom in thoracic disease, and at this point it is well to call attention to the fact that with the abdominal pain there is often tenderness on pressure and either rigidity or tympanites. In all the cases above mentioned there existed more or less abdominal tenderness and rigidity, though these symptoms were less marked in the region of the gall bladder than in the region of the appendix in the case last spoken of.

Among the more acute diseases of the lungs or pleura that exemplify the point of my paper, none does so more strikingly than empyema. This affection may

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

give rise to symptoms of an acute inflammatory or suppurative condition of a part below the diaphragm. In this connection we are reminded of the atypical behavior of physical signs in some cases of pulmonary disease. It has probably been observed by most of us that in some cases signs are either exaggerated, meager, absent or contradictory when viewed in the light of later developments in the case or when compared with postmortem findings.

It happened in these cases so far recited that physical examination of the chest failed to disclose, early in the history, the nature and seat of the disease. There was a transference of the usual symptoms from the chest to the abdomen and an abeyance of the physical signs, as all the patients were carefully examined by palpation, percussion and auscultation.

The case of empyema illustrative of its possible deceptive character was seen in the Buffalo General Hospital under the care of Dr. Stockton. The patient was a young man of strong physique who entered the ward complaining of severe pain in the left side extending from the lumbar region around to the umbilical region. He had a high intermitting and remitting temperature, a heavily-coated tongue, nor were his respirations more disturbed than might have resulted from the acute abdominal pain. There was some tenderness and rigidity of the muscles of the left side of the abdomen. On deep palpation in the region of the left kidney considerable pain was elicited. There existed some abdominal distension. The patient grew steadily worse and operation for a probable perinephritic abscess was decided on, but at that juncture physical signs of fluid in the left pleural cavity developed and the exploring needle revealed an emypema, from which the man made a timely recovery after an Estlander operation.

The explanation of the transference of pain to the abdomen in thoracic disease is clear when we recall the anatomy of the six lower intercostal nerves, branches of which are supplied to the abdominal parietes. It is notable that pain is especially felt in the abdomen in cases with acute inflammation of the parietal pleura.

To turn from pain in the abdominal regions accompanying pulmonic disease let me call attention to abdominal tympanites as a symptom in lobar pneumonia. This constitutes one of the most troublesome, annoying and unyielding symptoms of the disease. Sometimes it supervenes early in the course of the affection, but it is more often a condition occurring at the height of the disease when nervous, circulatory and muscular powers are overwhelmed by the septicemia. The abdomen is greatly distended, but is flaccid and toneless. Cathartics may reduce the distension in a slight degree, but it is apt to return promptly. High enemata sometimes diminish it, but unfortunately they frequently fail to give relief. The distension seems to be due to extreme relaxation, almost paralysis, of the muscular coat of the intestine, the diaphragm and the abdominal parietes, and not infrequently distension is so pronounced that respiration is materially interfered with, while at the same time the bowels respond readily to mild catharsis, apparently an anomalous state of affairs. In some cases tympanites encroaches on thoracic space to such a degree as to occasion or increase already existing cyanosis, and when the bloating is amenable to treatment the circulation of the patient is seen to improve. This symptom is observed more especially in the extremes of life and in obese subjects with low resistance and myocardial disease. In its most aggravated form it is of ill prognostic significance and its treatment is eminently unsatisfactory. In most cases special remedies are of little or no value, while it yields only to strychnin, fresh air and general eliminative measures. As special remedies, however, physostigmin salicylate, 1/100 grain hypodermically, has seemed useful in a few of my cases, and ergot for its effect on unstriated muscle may prove advantageous. Small doses of digitalis or strophanthus, through their influence on the circulation, sometimes lessen tympanites. Carminatives that are also stimulants, such as compound tincture of cardamom, compound spirits of lavender, kümmel, oxycamphor, aromatic spirits of ammonia, etc., have given relief in some cases, while reputed intestinal antiseptics have, in my experience, proven woeful failures. A light ice-bag or ice-water coil, over the epigastrium occasionally serves to impart tone to the abdominal sympathetics.

Let us now consider abdominal symptoms as they occur in connection with cardiac disease or morbid conditions of the aorta. One of the most common is epigastric pain resulting from myocardial disease, and I may best illustrate this by the case of a woman near three score years of age, who was seized in midafternoon with intense epigastric pain accompanied by vomiting. Under suitable doses of morphin hypodermically the pain subsided and the night was spent with a fair degree of comfort. The next day epigastric pain and vomiting recurred and were again controlled by morphin. The following day the patient suddenly died, and at autopsy there was found hemopericardium with rupture of the left ventricle near the interventricular septum and the apex of the heart. We argued that the tear in the cardiac wall, which was one and a half centimeters long, had occurred slowly and the extreme pain of the process was referred to the epigastrium.

Another case was that of a middle-aged, hard-working man from the country, who was referred to me some years ago, and who complained of stomach symptoms, chiefly gastric pain, eructation and vomiting. His heart was irregular, weak and dilated; his pulse small, weak and irregular. His blood pressure was low, as pulmonic accentuation was marked and he had considerable cyanosis. Although I wrote his physician that his gastric symptoms were due to his cardiac condition, I failed to predict a rupture of the heart. The patient returned home, was put at rest in bed, was given cathartics, iodids in small doses and strychnin, but he grew steadily worse and died a few days thereafter. His physician wrote me that he found postmortem a small rupture of the left ventricle.

Not alone in such extreme degrees of myocardial degeneration are gastric symptoms pronounced; we frequently encounter them with angina pectoris. In cases now under observation the patients complain of flatulence and periods of great gastric discomfort, and they are persistent in their opinion that most of their trouble arises from disordered digestion. In several such cases within the past few years careful examinations of the stomach have disclosed normal gastric chemistry and motility; commonly, however, the stomach by percussion and inspection is found distended with gas and pressing uncomfortably on the diaphragm. In one case of typical angina pectoris there is present a great prominence, almost protrusion, of the gastric area, tympany rising high and suggesting eventration of the diaphragm. It is to be noted also that the stomach symptoms yield not to digestants, stomachics nor gastric sedatives, but subside under the effects of iodids and nitroglycerin.

Mention of these cases brings to mind a few instances of gastralgia in men who did not complain of chest pang nor of radiation of pain to the shoulders or arms, but who experienced relief by taking iodids and nitrites. In these cases, by direct examination, by exclusion and by therapy, cardiovascular disease was diagnosticated as the cause of their so-called gastralgias.

Doubtless aortitis is the fundamental fault in not a few of such patients, as the pain caused by thoracic aortitis may be felt in the epigastrium.

In many cases of valvular heart disease with failure of compensation resulting in general venous congestion there exists troublesome epigastric distress, pressure and more or less pain which is often associated with nausea and vomiting. In some instances the passively congested liver seems the chief cause of the symptoms, and I have marked it particularly in patients with hepatic enlargement. In others, while the liver dulness is little or not at all increased, the gastric distress is pronounced, and in these patients the symptoms are to be ascribed to general portal engorgement with special gastric congestion and low grade gastritis.

An important factor also exists in the dilated and over-distended superior mesenteric vein. Possibly the abdominal gastric sensations are the result of pressure of the enlarged and heavy heart on the diaphragm; at all events we see increasing cardiac dilatation accentuate symptoms. Whatever the exact explanation of the occurrence of the symptoms, it is plain that they yield only to measures that better cardiac action and the circulation generally.

In addition to the morbid manifestations already mentioned there may result from cardiac failure more or less abdominal distension, ascites or edema of the abdominal parietes.

So also may gastrointestinal symptoms be caused by chronic pulmonary disease such as asthma and emphysema, with or without chronic bronchitis. The intimate relations existing between the digestive organs and the chest organs in asthma are familiar to us all. We are reminded of the disaster following overindulgence at dinner by the confirmed asthmatic, and the difficulty in such cases lies not so much with the stomach as with the lungs.

From this short paper detailed discussion of causes and effects is of necessity omitted, my prime object being merely to summarize a few of the most common and important morbid conditions and symptoms that may result as above described.

This presentation is entirely clinical. Laboratory examinations were made in all the cases mentioned, but bedside observations alone were of most importance in clearing up doubtful points and arriving at correct diagnoses.

436 Franklin Street.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

Mind and Body.—Instead of supposing that mind is something indefinite, elastic, inexhaustible, a sort of perpetual motion or magician's bottle, all expenditure and no supply, we now find that every single throb of pleasure, every smart of pain, every purpose, thought, argument, imagination, must have its fixed quota of oxygen, carbon and other materials combined and transformed in certain physical organs. And as the possible transformation in each person's framework is limited in amount, the forces resulting can not be directed to one purpose without being lost for other purposes.—Alexander Bain.

THE ACID INTOXICATION THEORY.*

OTTO FOLIN, PH.D.
WAVERLY, MASS.

To Boussingault[1] belongs the credit for the important discovery that diabetic urines usually contain extraordinarily large amounts of ammonia. Naunyn and Magnus Levy, and with them all modern writers on acidosis, ascribe this discovery to Hallerworden, though Hallerworden himself wrote of his results as confirming the much earlier findings of Boussingault. The reason why Boussingault's excellent work has been allowed to be forgotten is evidently the highly unfavorable criticisms passed on his analytical technic by his German contemporaries, yet it has turned out, as was definitely shown four years ago by Shaffer,[2] that Boussingault's technic was distinctly superior to that of his critics.

The discovery of oxybutyric acid in diabetic urines was the logical outcome of Stadelmann's endeavor to account for their high ammonia contents.[3] It is perhaps worth noting that this discovery came at a time when French autointoxication hypotheses were attracting much attention, and Stadelmann saw in his new organic acid a possible source of autointoxication. In his first paper he set forth the acid intoxication theory and indicated the logical alkali therapy in essentially the same form as we have it to-day.

Previous to this time and overlapping it by a number of years another intoxication theory had been advanced and energetically investigated by v. Jaksch, then a young man working in his father's clinic. V. Jaksch proved definitely that the volatile substance obtained by distillation of fever urines, and especially of diabetic urines, is acetone, and he held this to be the toxin immediately responsible for the onset of diabetic coma.

In the meantime Gerhardt's ferric chlorid reaction given by the urine in severe cases of diabetes had come into prominence, and in 1883 v. Jaksch[4] published a paper in which he described the isolation of the substance which gives this reaction and positively identified it as aceto acetic or diacetic acid.

This work of v. Jaksch, so far as I know, has never been either questioned or repeated—a rather extraordinary omission considering the important part played by diacetic acid in the acid intoxication theory. There is, in my mind, not much doubt but that the substance in diabetic and fasting urines which gives the ferric chlorid reaction really is diacetic acid; but the product which v. Jaksch isolated and analyzed can not have been anything else than oxybutyric acid contaminated with more or less of the substance which gives the ferric chlorid reaction. The work certainly stands in need of repetition.

V. Jaksch included the diacetic acid in his acetone theory of diabetic coma. That theory, however, failed to hold its own against the extensive researches made in support of the acidosis theory. The toxic effects of acetone were shown to be practicably negligible, and v. Jaksch was unable to substantiate his contention that acetone is the mother substance of the other two so-called acetone bodies.

* From the Chemical Laboratory of McLean Hospital.

* Presented as a part of a Symposium on Acidosis at the joint meeting of the American Physiological Society and the Association of American Physicians, in Washington, May 9, 1907.

1. Boussingault: Jour. f. Praktische Chemie, 1850, ll, 281.
2. Shaffer: Am. Jour. of Physiology, 1903, viii, 345; Folin: Ztschr. für Physiol. Chemie, 1902, xxxvii, 162.
3. Stadelmann: Arch. f. exp. Path. u. Pharm., 1883, xvii, 419.
4. V. Jaksch: Ztschr. f. Physiol. Chemie, 1883, p. 487.

On the other hand, the injurious effects of acids capable of combining with the basic groups in the blood and tissues could not be questioned, and these effects had indeed been demonstrated in a most striking manner a few years before by Walter.[5]

Only recently the validity of the evidence based on such acid poisoning experiments has been called into question. These objections are based on the newer teachings concerning the chemical reaction of the blood. Considered in terms of hydrogen and hydroxyl ions the diabetic as well as the normal body fluids have the same chemical reaction, i. e., they are practically neutral.[6] The blood of animals poisoned with mineral acids is, on the other hand, according to Szili,[7] not neutral but acid.

I do not think that the acid intoxication theory will suffer materially because of these more recent findings. The definition of alkalinity as derived from the ion theory and the subsequent proof that the animal organism has no such alkalinity is, to my mind, only another illustration of the repeated failures which have attended the plausible but one-sided and inadequate explanations of physiologic processes and conditions in terms of a few laws governing the solutions of electrolytes. Nevertheless it is rather surprising than otherwise that Walter's experiments could have remained so long one of the pillars of the acid intoxication theory. It certainly seems to me unwarranted to expect that the insidious and slowly increasing action of the weak oxybutyric acid, as it gradually accumulates within the diabetic organism, should be identical with the indiscriminate, brutal action of mineral acids when given to animals in doses large enough to kill within a few hours. In Szili's experiments the animals were killed within one hour. Such crude imitations of the acidosis of diabetic coma have, in my judgment, little if any bearing on the validity of the acid intoxication theory.

The startlingly clear, definite and plausible nature of that theory opened in the early 80s as attractive a field for investigation as has ever been found in pathologic chemistry. The close chemical relationship between oxybutyric acid and diacetic acid on the one hand, and between diacetic acid and acetone on the other, accounted admirably for the analytical findings and cleared the way for an attack of the fundamental problem as to the cause and nature of the disturbance in the intermediary metabolism which results in an excessive formation of these "acetone bodies."

The intervening years have produced a steady stream of physiological, chemical and clinical literature on this problem and much detailed information has accumulated. While the primary cause of the acidosis in diabetes is still as obscure as the cause of diabetes itself, much ground has been cleared and we have now at least a working hypothesis defining not only the material out of which the acetone bodies can be formed, but also the chemical reactions involved in their formation. The introduction of this theory, for which we are indebted to Knoop,[8] in Strassburg undoubtedly marks the greatest advance that has yet been made in the study of Stadelmann's acidosis, and in a paper of this kind I can hardly do better than to give it the prominence and the time which I believe it deserves.

The reasoning underlying Knoop's investigation was a happy one. As a result of much previous work it had become clear that while both protein and fat can lead to the formation of the acetone bodies, the fatty acids probably constitute the chief source. The fatty acids are, however, burned so readily and completely within the animal organism as to preclude investigation of the different steps involved in their destruction, yet without information on this subject the chemistry of the oxybutyric acid formation in diabetes and in fasting could not be solved. By the comparatively simple device of linking the fatty acids to the stable benzene group Knoop has now been able to arrest the oxidation of the fatty acids at enough intermediate points to give us a fairly definite conception of the step by step process involved in their destruction. Knoop's paper was published in 1905. The most important data on which Knoop based his important conclusions as to the chemistry of fatty acid oxidation are given in the accompanying table:

KNOOP'S TABLE.

	Intake.	Output.
Benzoic acid	C_6H_5COOH	C_6H_5COOH.
Phenyl acetic acid	$C_6H_5CH_2COOH$	$C_6H_5CH_2COOH$.
Mandelic acid	$C_6H_5CHOH\ COOH$	$C_6H_5CHOH\ COOH$
Phenyl amido acetic acid	$C_6H_5CHNH_2COOH$	$C_6H_5CHOH\ COOH$
Phenyl propionic acid	$C_6H_5CH_2CH_2COOH$	C_6H_5COOH.
Phenyl β-lactic acid	$C_6H_5CHOH\ CH_2COOH$	C_6H_5COOH.
Phenyl β-keto propionic acid	$C_6H_5CO\ CH_2\ COOH$	C_6H_5COOH.
Cinnamic acid	$C_6H_5CH\ CH\ COOH$	C_6H_5COOH.
Phenyl alanin	$C_6H_5CH_2CHNH_2COOH$	Disappears completely.
Phenyl α-lactic acid	$C_6H_5CH_2CHOH\ COOH$	Disappears completely.
Phenyl α-keto propionic acid	$C_6H_5CH_2CO\ COOH$	Disappears completely.
o-Amino cinnamic acid	$C_6H_4CH\ CNH_2COOH$	Disappears completely.
Phenyl butyric acid	$C_6H_5CH_2CH_2CH_2COOH$	$C_6H_5CH_2COOH$.
Phenyl α-keto butyric acid	$C_6H_5CO\ CH_2CH_2COOH$	$C_6H_5CH_2COOH$.
Phenyl iso crotonic acid	$C_6H_5CH\ CH\ CH_2\ COOH$	$C_6H_5CH_2COOH$.
Phenyl valerianic acid	$C_6H_5CH_2CH_2CH_2CH_2COOH$	C_6H_5COOH.

Knoop's conclusion as to the significance of these results is in brief as follows: When ordinary fatty acid derivatives are linked to the benzene group, C_6H_5, and the resulting compounds are fed to dogs, the fatty acid side chains are broken down by oxidation of the carbon atom third from the end of the chain and the intervening two carbon atoms are split off. In other words, not one, but two, carbon atoms are split off at a time, and only so many are split off as can be taken two at a time and still leave at least one carbon atom attached to the benzene ring. If the fatty acid side chain attached to the benzene contains only one or only two carbon atoms these can not be split off and such compounds will pass through the organism unchanged or but little altered. With three or with four carbon atoms in the chain two can be split off, while with five or with six carbon atoms in the chain four can be removed.

It should be clearly borne in mind that the validity of this law of oxidation has as yet been demonstrated only for such benzene compounds as are not completely destroyed within the animal organism. There is also undoubtedly some definite law which determines whether a benzene compound can or can not be completely oxidized, but no adequate hypothesis covering this point has yet been advanced.

Knoop's theory does indeed admirably account for the facts, and it gives us for the first time a tangible conception of the intermediary katabolism involved in the oxidation of food within the animal organism.

Knoop's theory of fatty acid oxidation was soon given practical application in the study of the origin of the acetone bodies. Embden and his associates and Baer and Blum have attacked the problem from two different sides.

5. Walter: Arch. f. exp. Path. u. Pharm., 1877, vii, 148.
6. Benedict (H.): Arch. f. die gesammte Physiologie, 1908, cxv, 366.
7. Szili: Arch. f. die gesammte Physiologie, 1908, cxv, 82.
8. Knoop: Ztschr. f. die gesammte Biochemie, 1905, vi, 150.

Embden,[9] then working in the same laboratory with Knoop, had found that when aërated blood is passed through excised livers and afterward subjected to distillation, acetone is obtained in appreciable quantities. Later he attempted to determine whether the acetone yield could be increased by the addition to the blood of different organic acids, and it was found that some substances did and others did not lead to an increased formation of acetone.

In the meantime Baer and Blum[10] fed a number of the same acids to diabetic patients, and the results indicate that those products which in Embden's experiments yielded acetone after being acted on by the liver also gave oxybutyric acid and acetone when fed to diabetic persons. Moreover, most of the substances which did lead to an increased formation of acetone or oxybutyric acid were the same which could readily do so according to Knoop's beta-carbon oxidation theory.

From these researches it would appear that merely by inspection of the chemical constitution of a given substance we are now able to say whether it can or can not give rise to acetone bodies within the diabetic organism. Summarizing the results with regard to normal fatty acids we may say that all of these which contain an even number and not less than four carbon atoms can be oxidized to oxybutyric acid. The ordinary higher fatty acids (oleic, palmitic and stearic acid) can each give rise to but one molecule of oxybutyric acid. Weight for weight caproic acid can yield three times and butyric acid more than four times as much oxybutyric acid as the above-mentioned higher fatty acids. Normal fatty acids which contain an odd number of carbon atoms can not yield oxybutyric acid. The formation of oxybutyric acid and of diacetic acid in all these cases may be said to be due to the fact that the diabetic organism is not able quite to finish the attack on the beta-carbon atom of butyric acid. Whether this failure is primarily a matter of faulty oxidation or of inadequate hydrolysis is, in my opinion, still uncertain.

The original fatty acids of the fats are not the only source of the acetone bodies. The amino acids which go to make up the proteins have only to lose their amino groups to become fatty acids, and these then also become precursors of the acetone bodies. The question whether fat or protein is the chief source of the acetone bodies is, therefore, now, theoretically at least, sufficiently settled.

While emphasizing the important and promising character of these recent researches into the origin of the acetone bodies I must also state that they contain not a little which is not convincing and which stands in need of further investigation. There is need as yet to distinguish sharply between the definite findings of Knoop and the results reported by Embden, and more especially by Blum and Baer. The facility with which the two last-named authors have introduced auxillary hypotheses in order to make Knoop's theory available for the formation of oxbutyric acid out of other than normal straight chain fatty acids will, I fear, only tend to obscure the clear and important beta-carbon oxidation theory as advanced by Knoop.

Even the alleged similarity in the behavior of amino acids and fatty acids with one less carbon atom should be accepted with some reservation. The different behavior of phenyl alanin and phenyl acetic acid in the experiments of Knoop and of Embden has evidently not been considered in this connection.

9. Embden: Ztschr. f. die gesammte Biochemie, 1906, vii, 121 and 129.

10. Baer and Blum: Arch. f. exp. Path. u. Pharm., 1906, lv, 69, and lvi, 92.

It is after all to be remembered that even in the faulty katabolism of the diabetic organism the chief trend can hardly be toward the production of the greatest possible amount of acetone bodies.

In connection with the interesting results achieved by the help of Knoop's theory a number of important questions should be discussed: Why does the oxidation of carbohydrates diminish the formation of acetone bodies? Why are only oxybutyric and diacetic acid rather than others, such as lactic and oxalic acid, produced in amounts sufficient to play a rôle in the onset of diabetic coma? Is there any valid reason for assuming, as is almost universally done, that oxybutyric acid is the direct precursor of diacetic acid and acetone? And, finally, what has Embden's localization of the acetone formation in the liver to do with the formation of acetone bodies in the diabetic organism? Time, however, does not permit me to go into these questions.

Before closing I wish to say a few words about the alkali therapy which forms such an integral part of the acid intoxication theory. The administration of sodic carbonate in cases of acidosis has been advocated and tried, consistently and extensively, for the last fifteen years, yet it has hardly been so successful as one would have reason to expect if acidosis were the primary cause of diabetic coma. As a remedial measure, after the onset of coma, it seems to have been practically abandoned.

Exponents of the acid intoxication theory claim, to be sure, greater success for the sodic carbonate treatment than is now conceded by men like v. Noorden, but they have also been compelled to explain its shortcomings. Naunyn's explanation is that, on the one hand, too much damage may have been done by the acetone bodies in the early stages of acidosis and that, on the other hand, the sodic carbonate does not reach the tissues where the acetone bodies are formed and where the damage is done.

Since the alkali therapy must after all furnish the final practical proof of the validity of the acid intoxication theory, this phase of the problem ought, it seems to me, to receive more attention than it has yet received from the exponents of that theory. The use of sodic carbonate alone is not in accordance with current teachings of physiology. The superiority of salt mixtures as against any one salt in maintaining living tissues intact has been abundantly demonstrated. The toxicity of pure sodium chlorid, as shown by Loeb, the superiority of Ringer's solution to "normal salt solution," and a number of other well ascertained facts, clearly indicate that the flooding of a diabetic patient with sodium might in itself be injurious or at least less promising than the use of an equivalent mixture of sodium, potassium, calcium and magnesium.

Moreover, since the greatest skill is required to furnish advanced diabetic patients with sufficient food, and since the blood of these patients shows a diminished capacity for transporting carbon dioxid, it would seem that the useless and burdensome carbonic acid of the carbonates should be replaced by organic acids having some fuel value. The prospect of finding a variety of organic acids the salts of which would be suitable for this purpose is now, of course, greatly increased by the investigations of Knoop, Embden and Blum and Baer, which have already been mentioned.

Aside from the food value of such salts of organic acids, there is another and far more important reason why they should be tried on a large scale. From the

fact that these salts are foods there is every reason to believe that they, like other food, should penetrate to every part of every tissue just as the precursors of the oxybutyric acid are supposed to do.

Through the oxidation of these acids the oxybutyric acid formations should tend to diminish and whatever oxybutyric acid did form would, or should, be neutralized in the very cells where it originates—a result confessedly not attained by the sodic carbonate treatment.

ACUTE SPERMATOCYSTITIS.*

A. NELKEN, M.D.
NEW ORLEANS.

To Jordan Lloyd, of Birmingham, England, is due the credit of first calling attention to the importance of acute infections of the seminal vesicles. In two concise papers[1] Lloyd showed the comparative frequency of gonorrheal infection of the vesicles and laid stress on the treatment.

Following the writings of Lloyd scattering papers appeared, especially in the German medical press, but no serious consideration was given to the subject until 1894, when Eugene Fuller, of New York, began his masterly series of articles on the seminal vesicles, valuable especially for the thorough presentation of the anatomy, physiology and pathology of these organs.

The work of Fuller has awakened at least that part of the medical profession who pay special attention to disorders of the male sexual apparatus. But it is probable that the average practitioner, for the greater part, is yet unconvinced and is inclined to bunch all cases of acute seminal vesiculitis, prostatitis and infections of the so-called vesicle neck under the general designation of "inflammation of the bladder." It is not unusual, even among genitourinary surgeons, to find vesiculitis diagnosed and treated as prostatitis, or, what is far more common, to have the prostatic inflammation recognized, while the vesicular or perivesicular complication is undiagnosed. In perivesicular inflammation especially is care required in the differentiation, for the upper border of the prostate is often continuous with and may be lost in the perivesicular swelling.

It is strange that even yet the difficulties of diagnosis are being constantly exaggerated. Casper's latest book contains the statement: "Examination of the seminal vesicles is difficult because of their concealed position." The entire article gives the impression that in the large majority of cases examination or treatment of the vesicles through the rectum is impracticable. Great stress is often laid on the necessity of the surgeon having a long forefinger. As a matter of fact what is needed is not so much the long finger as the trained one.

It is true that stout patients offer difficulties which frequently make examinations unsatisfactory, or even impossible. But failure on the part of the experienced operator is usually due to pain or nervousness in the patient, which makes him tighten his perineal muscles on the introduction of the examining finger. In these cases, when failure follows the first attempt, no difficulty is experienced later when pain has been relieved or the patient's confidence gained. In especially favorable subjects—thin individuals with relaxed muscles—the examining finger can often outline the furthest borders of the vesicle without difficulty.

The position of the patient is a matter of choice. Most operators prefer the knee-chest or other similar positions. I prefer the dorsal position, the patient lying on the examining table with his feet in the stirrups and the back of the table slightly raised so as to flex the body. This position crowds down the pelvic contents and so facilitates the examination. Besides, the physician is then able to watch the patient's expression for evidence of pain, and can also see any discharge as it flows from the urethra.

The finger first outlines the prostate and notes its size, consistency and sensitiveness; then, passing upward, first to one side, then to the other, feels for the vesicle. The healthy vesicle can often be distinguished. It is an error to assume that every fluctuant vesicle is diseased. It is not at all uncommon to find a certain degree of distension in healthy individuals when there has been no recent emission.

If the vesicle is diseased palpation is ordinarily not difficult and the trained finger rarely fails to make out the trouble. A longitudinal swelling, more or less sensitive, is found lying above and to the side of the prostate, with its long axis directed downward and inward. This mass is usually fluctuant or doughy, in the latter condition pitting on pressure. At times the swelling is hard, almost like a solid body. These variations, of course, depend on the degree of inflammation and on the nature of vesicular contents. It must be noted, however, that sometimes it is impossible to decide by rectal feel whether or not the vesicles are infected. In doubtful cases microscopic examination of the expressed secretion, obtained after a method to be hereinafter described, is required.

Perivesicular inflammation is readily recognized by rectal touch. The swelling varies from a painful, boggy mass above the prostate to a hard, board-like swelling, filling the entire space between the bladder and the rectum and extending above well beyond the reach of the examining finger.

The chief cause of acute spermatocystitis is, of course, gonorrhea. Other causes may be stricture, with its accompanying urethritis; enlarged prostate, complicated by a septic urine; or sexual excesses. In this last named condition it is probably necessary that there be infection either in the urethra or prostate. Acute spermatocystitis due to tuberculosis is so rare that it may be dismissed with mention. Due regard must be paid to the possibility of acute infection being caused by faulty or severe treatment of an urethritis, or by the passage of instruments without proper attention to aseptic technic. I had a number of such unpleasant experiences before I adopted the routine practice of always irrigating a septic urethra before passing an instrument into the bladder.

Acute spermatocystitis is usually complicated by prostatitis. In about 300 cases I have found the prostate involved in over 90 per cent. That this should be so is not strange if we consider that infection to reach the vesicles must pass through the prostatic urethra.

It is interesting to notice here that infection of the vas, the epididymis and the testicles can only take place through the corresponding vesicle. Fuller has clearly shown that the generally accepted idea that the vas deferens joins with a short duct from the vesicle to form the ejaculatory duct is an error. The dilated end of the vas, known as the ampulla of Henle, connects by a sphincteric or valvular opening with the vesicular cavity. Rhythmic contractions of the ampulla pump the

*Read before the Orleans Parish Medical Society, April 27, 1907.
1. Brit. Med. Jour., 1889, i, 882; the Lancet, 1891, ii, 974.

testicular secretions into the vesicle. Here it remains until contraction of the vesicle forces it into the prostatic urethra through the ejaculatory duct. Fuller found, on catheterizing the duct through the urethral opening, that the bristle always passed into the vesicle, nor was it possible by any amount of manipulation to make it pass into the canal of the vas deferens.

The symptoms of acute vesiculitis vary with the nature and extent of the inflammation and may not be markedly different from the symptoms of inflammation in the neighboring genitourinary organs. Fever, if present, is usually slight. There is a feeling of weight and fullness in the perineum, which, especially if there be marked perivesiculitis, gives the patient the sensation as though all his pelvic organs were dropping out.

Urination is usually increased, both in frequency and quantity and accompanied by more or less tenesmus. Pain on urination is far more acute if perivesiculitis be present. Particularly is the voiding of the last few drops of urine painful, as the inflamed perineal muscles contract.

Some writers, notably Belfield, have ascribed retention of urine to vesiculitis. I have never seen retention occur save where there was sufficient prostatic swelling to cause obstruction to the urinary flow.

An unusual symptom, one that I saw exemplified in a recent case, is colicky pain similar to the pain of hepatic or renal colic. About every twenty minutes my patient would get an exquisitely painful attack, the pain being referred to the penis just in front of the scrotum. These pains, lasting about one or two minutes, would usually be followed by a desire to urinate. Examination showed a hard and swollen, very tender right vesicle. In this case, which is much too lengthy to be reported here in detail, there was probably an obstruction of the right ejaculatory duct, either by inflammatory swelling or by inspissated secretion, or, as is most probable, by both. The pain was due to the contraction of the swollen vesicle in a fruitless attempt to empty itself. Recovery eventually followed a very painful seminal emission, the discharge being freely mixed with blood and pus.

The treatment of acute vesiculitis, when seen in the commencement of the attack, is chiefly symptomatic and expectant. Rest in bed is always indicated. Pain is sometimes relieved by cold to the perineum, although recent advances in therapy would suggest that cold applications are contraindicated in inflammations. Heat may be applied to the perineum, or by some form of rectal douche, directly over the inflamed region. Pain and tenesmus are best relieved, however, by the administration of some form of opium, either alone or combined with acetphenetidin or acetanilid, given by mouth. The use of rectal suppositories containing opium, belladonna, and cocain is a common practice. Cocain, in safe doses, has only a brief analgesic action, limited to the rectal mucous membrane with which it comes in contact, and, therefore, can have little if any value. The virtue of belladonna in this combination is problematical and can only be exerted through systemic absorption. The valuable ingredient is, of course, the opium. The preparations of opium, as is well known, relieve pain only through their influence on the nerve centers and are more active given hypodermatically or by mouth than by rectum.

Digital examinations are painful and should not be made oftener than may be needed to follow the progress of the case. The possibility of a perivesicular abscess rupturing into the rectum, or even into the peritoneal cavity, must be borne in mind. If threatened, immediate perineal incision is indicated. Draining into the rectum, as advocated by Belfield, is hardly ideal surgery. Fortunately, these conditions are rare sequelæ of vesicular infection, and the conservative surgeon is seldom called on for such intervention.

Pus in the perivesicular space is usually absorbed and the inflammatory exudate becomes organized. Relief of the inflamed vesicle takes place as the swelling subsides, and the now liquefied secretion finds exit through the ejaculatory duct. Rupture of the distended vesicle into the bladder is, I believe, much rarer than is supposed by some authorities. At any rate, the cystoscope usually fails to reveal any point of rupture. Rupture into the urethra, as advanced by Casper and others, must be even more infrequent.

The ejaculatory duct is the common route of escape for the pent-up secretions of an acutely inflamed vesicle, and the suddenness with which this discharge occurs is no reason to assume that rupture has taken place. It is one of the functions of the seminal vesicles to contract forcefully in expelling their contents.

When the acute symptoms have subsided then only is local treatment indicated. This consists essentially in stripping or milking the diseased vesicle. A number of instruments have been devised for this purpose, but none of them compare in efficiency with the finger.

The position of the patient has already been referred to. No difficulty is experienced in emptying at least the lower segment of the vesicular pouch. The secretion flows either out at the meatus or back into the bladder. It is more likely to appear at the meatus if the bladder be empty. If it is discharged into the bladder it is voided with the urine as a viscid, sausage-shaped mass, as thick shreds or as opaque globules, the form of which, as Fuller suggests, is probably due to the whirling motion imparted by the urinary stream.

In doubtful cases the crucial point in the diagnosis of vesicular infection is the presence of pus in the secretion. I desire to offer the following method of obtaining this secretion uncontaminated, a method which, so far as I know, is original:

The patient urinates, the anterior urethra is washed out and a fair-sized catheter is introduced into the bladder. The bladder is well irrigated and about 200 c.c. of sterile water injected and retained. The catheter is clamped and left *in situ*. The retention of this water, I believe, facilitates the escape of secretion on the side of the catheter and also permits of less delay. The finger is then introduced into the rectum and the prostate is thoroughly massaged, care being taken to avoid pressure on the vesicle. The retained water is then allowed to escape into vessel No. 1. Again the bladder is well irrigated and the same quantity of water retained as before. The right vesicle is then stripped, care being taken to avoid the prostate. The bladder contents obtained are now emptied into vessel No. 2. Finally the irrigations are repeated as before, the left vesicle milked, and the bladder contents labeled No. 3. From the description this procedure may seem to require some time, but the three specimens can readily be obtained in from ten to fifteen minutes. If the irrigations are thorough and the strippings carefully done, vessel No. 1 should contain prostatic secretion, No. 2 the secretion from the right vesicle, and No. 3 that from the left. These specimens can be examined microscopically and exact conclusions arrived at.

Rarely is the vesicular secretion so viscid that it will not pass through a catheter, but when this does occur the bladder can be irrigated and if the secretion is not thus broken up the catheter may be withdrawn and the patient allowed to urinate. Should the examination not be completed the catheter should be reintroduced.

Epididymitis due to the forcing of pus into the vas is a possible danger in massage of the vesicle, although, possibly because of the reflex closing of the sphincteric opening into the ampulla of Henle when pressure is made on the vesicle, is not so common as might be expected.

The chief danger to the enthusiastic beginner is a rekindling of the acute symptoms through treatment too vigorous or too often repeated. A number of such unpleasant experiences have taught me the wisdom of making haste slowly. Treatment should always be temporarily discontinued as soon as tenderness appears. The frequency of stripping varies anywhere from every day to once a week, about twice a week being the average. It must be adapted to the individual patient both as to its frequency and as to its vigor.

Intravesical irrigations, after the method of Janet, are desirable after massage, but not absolutely essential. Their chief value is their influence on the complicating urethritis. When there is perivesicular exudate the use of heat is advantageously combined with the massage. For this purpose there are a large number of rectal irrigators on the market, all of them of greater or lesser efficiency. Those made on the principle of the Arzberger hemorrhoidal apparatus, with appropriate curve, are probably the most satisfactory for routine use.

Applications of chemical counter-irritants through the rectal speculum are hardly worthy of serious consideration. Surgical measures, save for the threatening abscess conditions already referred to, are never indicated in acute vesiculitis.

This paper does not include the chronic type of this disease, and that subject is too vast and too complex to be even touched on in the limits of this article.

Under intelligent treatment the prognosis of acute seminal vesiculitis, whether simple or complicated by prostatitis or perivesiculitis, is generally good. We shall see very much less of those obstinate neurotic, sexual and genital symptoms, which so commonly accompany the chronic disease, if we are more prompt in recognizing and treating that common disorder of the male Fallopian tube, acute spermatocystitis.

A METHOD OF PERFORMING TENOTOMY WHICH ENABLES THE OPERATOR TO LIMIT THE EFFECT AS REQUIRED.*

FRANK C. TODD, M.D.
MINNEAPOLIS.

A complete tenotomy of an extraocular muscle effects a change of about 13 degrees. This can be varied only by following Panas' method of stretching the tendon previous to tenotomizing, as described by Dr. A. Edward Davis before this Section in 1901; this produces somewhat less effect, because the muscle, having been previously stretched, reinsertion takes place further forward on the globe. A somewhat increased effect may be produced by extreme rotation of the eye away from the muscle after tenotomizing, thereby stretching or rupturing some of the accessory attachments.

But this does not give much opportunity of regulating the effect of a tenotomy and no possibility of correcting errors of less than about 13 degrees. Furthermore, we do not know where the tendon will become reattached, consequently how much disturbance of the muscle balance not previously existing may be brought about by this effort to make correction. Therefore, complete tenotomy is always undesirable and is, indeed, unsafe when we are aiming to bring about something more than cosmetic results. The partial tenotomy (of Stevens[1]) is unsatisfactory and I have found it entirely ineffective. This we would naturally expect to be the case, for if we leave uncut any of the fibers at each side of the tendon of an extraocular muscle these uncut fibers hold the tendon in place firmly until reattachment takes place in the same location. In those cases in which some effect has been produced by such a partial tenotomy, all of the tendon must have been severed, leaving only secondary lateral insertions (the adeniculum tendinis of Merkel[2]) at the edge.

Savage[3] proposes and practices incision of one side of a tendon; but this is for the purpose of changing the plane of action of the muscle.

Because an error of less than 13 degrees can not be corrected by a tenotomy and because of the facts just mentioned regarding the so-called partial tenotomy, I have practiced the operation described below for producing a limited effect and securing just the amount desired.

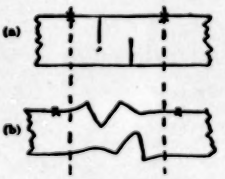

Fig. 1.—Showing the author's method of tenotomy (a) the relative positions of incisions and (b) the lengthening produced.

While the severing of all but a few of the fibers of the tendon will produce no effect we may sever a portion of the tendon on one side and, in another place on the opposite side, situated a short distance longitudinally from the first incision, sever the remaining fibers and thereby lengthen the tendon. However, no lengthening will take place until every fiber is severed in one place or another.

OPERATION DESCRIBED.

Figure 1 describes better than words how this method may be practiced (a) and shows the results secured (b). We only need to lengthen the cut to produce more effect. The tendon is first exposed and a tenotomy hook placed under it, an incision is made in one edge of the tendon near its attachment to the globe (this will be on the corneal side of the hook). At about two-thirds of the width of the tendon from the first incision, but on the opposite edge, the second incision is made (this will be on the side of the hook toward the muscle). The length of the incisions depends on the amount of effect it is desired to secure. Measurements should be taken during the opera-

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Motor Apparatus of the Eye, p. 48.
2. Howe: The Muscles of the Eye, 1, p. 38.
3. Ophthalmic Myology, p. 160.

tion, as shown in the description of the operation on Case 1.

This method is the one I have practiced in the illustrative cases herewith reported.

Case 1.—*Hyperphoria.*—C. P., male, aged 48, consulted me March 5, 1904. Test, homatropin.

R., 6/30, 6/6 + 1.25 ⌒ + .50X 90 R. H. 2°, Superduct 4°.
L., 6/30, 6/6 + 1.75 ⌒ + .25X180 Subduct 2°.

No cyclophoria; at times he had about a degree of esophoria. Patient having been under observation and wearing various corrections, including partial and total correction with prisms, with nothing more than temporary relief, after consultation with Dr. Würdemann it was decided to operate on the right superior rectus. A further study of the case demonstrated that there was a total R. H. of 3¾°.

VERSIONS AS SHOWN BY THE TROPOMETER.

	Super.	Sub.	Ad.	Ab.
R.	45°	40°	50°	45°
L.	35°	40°	50°	45°

Operation.—After making a small conjunctival incision, incisions were made from each side of the tendon of the superior rectus of the right eye, one on the external side near the insertion and the other on the inner side about two-thirds the width of the tendon from the first. Following the first cutting, measurements were made with the single prism and red glass test, which showed no correction; the patient was again put on the table and the length of the incisions increased, bringing

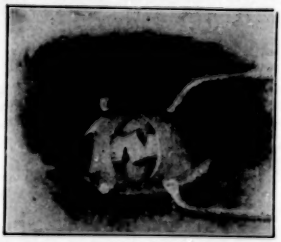

Fig. 2.—Incision in conjunctiva shown large for purposes of demonstration.

about the correction of 1.5° as shown by the prism test; a third lengthening of the incision resulted in 2° more. Desiring to secure an over-correction, a fourth incision was made correcting 1° more, thus giving about 1° of over-correction. The conjunctiva was brought together with a vertical suture and the eye covered with a pad.

Postoperative History.—First day, no diplopia; 0.5° over-correction.

Second day, 2° over-correction; pad was removed and left off.

Third, fourth, fifth and sixth days, from 2° to 2.5° over-correction shown.

Twelve days after operation orthophoria, superduct, 3.5°; subduct, 3.5°.

Test one month later showed orthophoria, superduct, 4°; subduct, 3.5°.

Six months later examination showed orthophoria, superduct, 2.5°; subduct, 2.5°; no cyclophoria, no exophoria, no esophoria.

Case 2.—*Exophoria.*—Mrs. E. K., aged 33, brought a letter from Dr. Taylor, Huron, S. D., stating that on repeated tests she had manifested 14° of exophoria. Dr. Taylor had worked with the case some years and had concluded that an operation was necessary.

My test showed refraction under homatropin as follows:

R., 6/9, 6/5 + .50 ⌒ + .25X 30.
L., 6/9, 6/5 + .50 ⌒ + .25X180.

Exophoria at 6 m. 12°, at 30 cm. 11°; ab. 15°, ad. 28°; no hyperphoria, no cyclophoria.

VERSIONS AS SHOWN BY THE TROPOMETER.

	Super.	Sub.	Ad.	Ab.
R.	30°	45°	40°	50°
L.	30°	45°	50°	50°

Treatment.—Operation was done as above on right external rectus. First incisions had no effect; the next incision, extending considerably further, brought about orthophoria. Desiring to secure considerable over-correction, a third incision was made and brought about 7° esophoria.

Postoperative History.—First day examination, no diplopia; esophoria, 4°; second day, esophoria, 9°; third day, esophoria, 7°; sixth day, esophoria, 7°; eighth day, esophoria, 8°.

Five months later measurements made by Dr. Taylor showed exophoria at 6 m. 0.5°.

A study of this operation and the cases reported bring out the following facts:

1. This method may be practiced in cases of heterophoria; the muscle balance measured by the Maddox rod or the prism test at any stage of the operation and the effect increased a little at a time (as low as one-half degree if desired) until the proper effect is secured.

2. In those cases of strabismus in which it is impossible to secure single binocular vision, measurements may be made by the parallax test (of Duane) or by the cover test and the effect regulated at will.

3. This operation may be performed in conjunction with advancement operation on the opposite tendon.

4. The possibility of the wrong insertion of the muscle is prevented, as the insertion is not interfered with, the muscle simply being lengthened.

5. The operation may be painlessly done under local anesthesia and the eye left unbandaged.

[For the discussion, see the department of Section Discussions in this issue.]

CUTANEOUS TUBERCULOSIS.

REPORT OF A SERIES OF CASES OF SMALL PUSTULAR SCROFULIDE (DUHRING).*

J. FRANK WALLIS, M.D.
NORRISTOWN, PA.

The rapid advance in the study of tuberculosis of the skin during the past twenty-five years has stimulated students of dermatology to greater vigilance in the observation of cases in general, with the result that we have an increased classification, which is at times difficult to comprehend. The necessity of grouping cutaneous diseases under more general headings is obvious for convenience in study. But to do this, and at the same time convey an intelligent idea of the individual diseases, it is necessary to analyze and digest the various synonymous terms and include them in their appropriate situations. It will be my aim in this paper to report a series of cases of small pustular scrofulide, ignoring to a large extent the synonymous terms and showing the relation of this affection to the great class of tuberculides.

The classification of these affections as made by Crocker includes them under two great headings—those directly due to the presence of tubercle bacillus, and those indirectly due to the tubercle bacillus or its toxin. Under the first heading he places lupus vulgaris, lupus verrucosus, scrofuloderma, miliary tuberculosis cutis and erythema induratum.

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

Under the second heading he includes those affections which have been termed "tuberculides" by Darier and designated "paratuberculoses" by Johnston. These embrace lichen scrofulosorum, acne scrofulosorum, acne agminata, morbilliform and scarlatiniform erythema, eczema scrofulosorum, pityriasis of Hebra, dyschromia, and lupus erythematosus. It may readily be seen that it would be difficult to find a place here for our cases.

In the study of cutaneous tuberculosis each observer has seemed to feel it incumbent on him to add one or more names to the already copious nomenclature and thereby increase the existing confusion. This condition of affairs is by no means new. Willin and Bateman designated the condition, "lupus," as such on account of its fancied resemblance to the attack of a wolf. Hippocrates mentions the same affections as eating or gnawing herpes, and Celsus describes it under the term of "therioma." Other terms, such as herpes exedens, herpes ulcerosus, dartre rongeante (Alibert) and eating tetter, were also employed by early medical authorities. The translations of the early Arabian writers introduced the titles formica corrosiva and formica ambulativa, thus rendering the Arabian word that corresponds to the eating herpes of the Greeks.

Mention is made of this variation in nomenclature, both ancient and modern, to illustrate the difficulties

Small pustular scrofulide.

encountered in reporting cases of unusual interest in properly designating and classifying them. The cases I have the privilege of reporting, for instance, may be described with accuracy under the term "small pustular scrofuloderm," the appellation coined by Duhring. Side by side with this we have a choice of the terms folliclis (Barthelmy), acne necrotica (Boeck), acne varioliformis (Hebra), impetigo rodens (Devergie), and a host of others. Surely this is confusing, as no two of these terms are accompanied by descriptions sufficiently similar to be fused into one.

The only solution that seems to suggest itself is to reject all except the terms tuberculide or paratuberculide, reserving it for the great aggregations of infections indirectly due to the tubercle bacillus. Descriptive adjectives could then be supplied to designate the clinical variety; for instance, small pustular tuberculide, small papular tuberculide, ulcerating tuberculide, etc. In cases of the diseases directly due to the tubercle bacillus there seems to be no confusion, and I would not venture to suggest any change, but in these allied affections a new departure of some kind is necessary. In the cases of syphilis the nomenclature is almost perfect; no one thinks of giving a special name (others than its descriptive title) to unusual aggregations or appearances of the lesions; they are syphilides, and may be large, small, papular, pustular, ulcerating, etc., but never enter into the entanglements so common to the tuberculides. I classify my cases under the head of tuberculides, since it was observed by one of the original writers (Duhring) that the affection was common in "scrofulous" individuals and those in whom a family history of "scrofula" could be obtained.

Case 1. *History.*—E. S., female, aged 13, Hebrew, born in Odessa. The father and mother had always enjoyed good health. The father, however, when he arrived at the age of the patient was the subject of a pustular eruption which had lasted for two years. A most careful interrogation failed to bring out any information that would aid in properly designating this eruption. The father died at the age of 60 years, two years previous to the time at which this child presented herself. There was no history of consumption or other common forms of tuberculosis in the family. The patient had four brothers, all of whom were healthy. There was one sister, and she also developed an eruption in early childhood, that underwent involution, leaving behind many scars, but since then she had been entirely free from any eruption.

The first manifestation of the eruption in our patient, according to the statement of the mother, was at the age of 16 months. At the time she came under observation, the face, backs of the hands, wrists, elbows and knees were the sites of a pustular eruption, with lesions in various stages of development. Some were mature pustules; some were crowned with ebony-like crusts; others were acute. There were many white scars representing the sites of remote lesions. The more recent were designated by scars of a deeper color; those of about six months brown, those more recent a dark blue. The first visit was in March, 1900, at which time tonic treatment was instituted and then continued for one year with most excellent results. The lesions had undergone partial involution. Three years later she was again seen with a slight eruption on the hands and arms, and one pustule on the forehead, which latter lesion was said to have occurred on the site of a mosquito bite. The case then passed into other hands. She was exhibited at a meeting of the Philadelphia Dermatological Society, in 1904, by Dr. Henry W. Stelwagon, at which time she had but a few lesions on the hands.

Case 2. *History.*—M. S., female, aged 19, Hebrew, born in Russia, sister of the patient in Case 1. This patient gave the history of an eruption similar to that of her sister, and on careful examination exhibited scarring not unlike that of variola, confined to the face, arms, hands and knees.

Case 3. *History.*—R. C., female, aged 14 years, Hebrew, born in Russia. The father and mother were healthy. The father, in childhood, had had an eruption similar to that of which the patient complained. The patient had three sisters and three brothers. One of the sisters and two of the brothers were affected with the same condition. Otherwise the family history was of no importance. When the patient was one year old the eruption appeared, and has continued almost uninterruptedly ever since. It consisted essentially of small pustules, most of which followed some trivial injury, such as a scratch. These pustules passed through various stages of development and disintegration. The most prominent stage was that in which a brownish or blackish crust was formed, which when cast off revealed a pitted scar resembling variola. The eruption in its entirety, when observed on several occasions, consisted of slight scratch marks, pustules, crusts and varioliform scars, distributed over the face, hands, wrists, elbows and knees. As in the preceding case, tonic medication was employed with comparatively good results.

Case 4. *History.*—F. G., female, aged 8, sister of the patient in Case 3. The eruption appeared when the child was six months old. The case came under observation at the same time as the preceding and was identical in every respect.

Case 5. *History.*—A. G., aged 6, brother of the patients in Cases 3 and 4. This case differed in no respect from the two

preceding, having all the characteristic lesions induced in the same manner.

Case 6. *History.*—J. G., male, aged 5, brother of the patients in Cases 3, 4 and 5. This case requires no special description, as the condition was exactly the same as the foregoing. These members of this family were exhibited individually and collectively before the Philadelphia Dermatological Society on more than one occasion, and the diagnosis confirmed by its various members.

Case 7. *History.*—R. G., female, aged 8, Hebrew, born in Russia. The family history was entirely negative, there being no trace of tuberculosis or any cutaneous eruption. The manifestations occurred after some slight traumatism, and consisted of pustules, crusts and pinhead to pea-sized pitted cicatrices. The lesions occurred on the face, hands, elbows and knees.

Case 8. *History.*—E. F., aged 7, Hebrew, born in Russia. The family history showed no affections that could in any way be connected with the eruption which began early in the life of the patient and possessed all the characteristic features common to the other cases.

Case 9. *History.*—H. M., female, aged 5, Christian, born in America. The father was born in Austria and the mother in America; both were in the best of health. One brother of the mother had been the subject of Pott's disease and another had died of "consumption." The patient had two sisters and three brothers, all of whom were healthy.

Before attempting an analysis of these cases we beg leave to quote from Stelwagon the following slightly paraphrased quotation from Duhring's original description:

The face and upper extremities are its usual sites. The lesions are disseminated and as a rule not abundant. They begin as pinhead to pea-sized papulopustules, resembling somewhat closely the small papulopustular syphiloderm. The pustular character is often slight and occupies the central part of the summit, the outer portion of the lesion being slightly hard and in the beginning with an insignificant areola. The formation is superficial, not extending deeply into the derma. They crust over gradually in the course of from one to several weeks, with depressed, shrunken, hard or horny, yellowish or grayish adherent crusts, which in time drop off, leaving marked, punched-out-looking, indelible scars, resembling those of variola. The lesions are further characterized by a sluggish, chronic course, and may last weeks or months. They appear at irregular periods, new ones coming out as older ones disappear, so that the patient is rarely free from them. The disease may continue for years.

It is only fair to state that many of the more recent writers have described this condition under the term "acne varioliformis," but I am inclined to favor the older classification, although I can not but defend the argument that it should be entitled "small pustular tuberculide."

A careful digest of the scant histories we have given will show several interesting features. The first prominent particular is the fact that the patients were all children and, with one exception, Hebrews and of foreign-born parents. This indirectly would serve to advance the theory that it was a disease peculiar to the cities, since immigrants of this class tend to congregate in the pauper settlements of the cities.

A second prominent point in the series of the cases is the tendency to occur in families. Cases 1 and 2 occurred in the same family, and while the patient's history in Case 2 is not sufficiently detailed for scientific purposes, it is convincing from a clinical standpoint. Cases 3, 4, 5 and 6 occurred in the same family. These were observed collectively by several competent authorities, and at one time by Dr. Duhring, thus completely effacing any doubt as to their similarity.

A third feature worthy of remark was the appearance of the lesions on the sites of trivial injuries such as scratches. In children of the slums itching is common by reason of the absence of everything that approaches hygiene. Sometimes it is due to the parasitic diseases and at others times not. In these cases the parasitic diseases were readily excluded. But it would not have been difficult for the novice to have associated these pustules, papules and crusts with scabies, for instance. The situation of the lesions on the face should remove such confusion.

A fourth interesting event was the improvement under ordinary tonic treatment. Unfortunately the patients were of a class that is unable to give continued attention to any form of medical treatment, so that cure even with the best of remedial measures is always a most remote possibility.

In conclusion I can only briefly refer to the circumstances that in only one instance was it possible to elicit any family history of tuberculosis, and that was in the case (Case 9) of the child born in America, whose mother also was American born. It is sincerely hoped that the contribution of this small group of cases may add somewhat to the knowledge of cutaneous tuberculosis.

TECHNIC OF THE OPERATION FOR REMOVAL OF THE MIDDLE TURBINATE.*

GEORGE I. RICHARDS, M.D.
FALL RIVER, MASS.

The so-called middle turbinate bone is a lateral diverticulum or wing coming off from the body of the ethmoid, to which it is attached by a narrow isthmus running along the entire length of the ethmoid anteroposteriorly, and hanging freely in the nasal cavity, with an inferior, external and internal free surface. Posteriorly, it extends as far back as the inferior turbinate; anteriorly, it is from three-quarters to an inch shorter. It serves to hide from view the bulla ethmoidalis, the uncinate process, the hiatus semilunaris and the frontonasal duct. It is removed not only on account of its own size but also to gain access to these structures, hence it is necessary in its removal to take away so much of it as will be sure to be ample for the purposes named. It may be of extremely large size, is frequently in contact with the septum, is abundantly supplied with blood, and has many sensitive nerve fibers.

The technic of its removal should be one which is rapid, simple and, so far as possible, painless. As the operation is a short one, and it is preferable to have the patient in the upright position and free from the annoyances of a general anesthetic, local anesthesia is very much to be preferred, although it is possible to do the operation under general anesthesia. The instruments used must take up but little room and must be stout and well made. I have tried many methods which have been advocated from time to time, but find nothing so satisfactory as the use of a small-bladed, stout, alligator cutting forceps and the snare, finding two sizes of alligator cutting forceps and one stout but small snare (with or without screw thread for tightening) to be all the instruments necessary. I have tried various forms of curved scissors, including those designed by Dr. C. R. Holmes several years ago, but find that they all take up so much space and shut off so much light that they

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

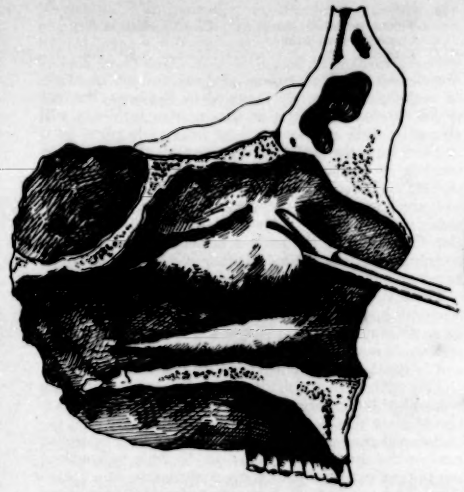

Fig. 1.—First step in the operation for removal of the middle turbinate. The cutting forceps has been withdrawn sufficiently to show the amount removed by the first cut. The second cut can be made in the same line if desired (author's specimen).

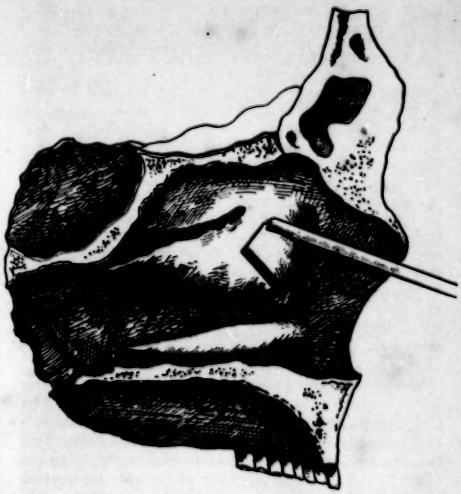

Fig. 3.—Snare in situation ready to be drawn tight to remove the portion outlined by the two previous cuts (author's specimen).

are impracticable, at least in my hands. The less room that the instrument occupies the less pain to the patient. The better the vision of the operator the more rapid the operation.

My technic is as follows: About twenty minutes is occupied in preliminary cocainization. First, a little spraying with 4 per cent. cocain directly over the region, also covering the anterior portion of the inferior turbinate and septum, since these are bound to be impinged on more or less by the instruments used; then the careful packing of pledgets of cotton soaked in 20 per cent. cocain, the first underneath the middle turbinate, carrying it clear up in the furrow until it reaches the point where the middle turbinate is joined to the body of the bone, then one exactly underneath, then one be-

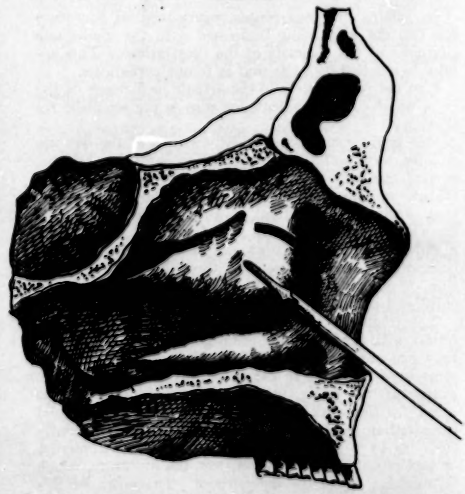

Fig. 2.—Showing position of cutting forceps for the second stage of the operation, the cutting forceps being introduced as nearly vertically as possible and as far back as is required to remove a sufficient portion of the bone (author's specimen).

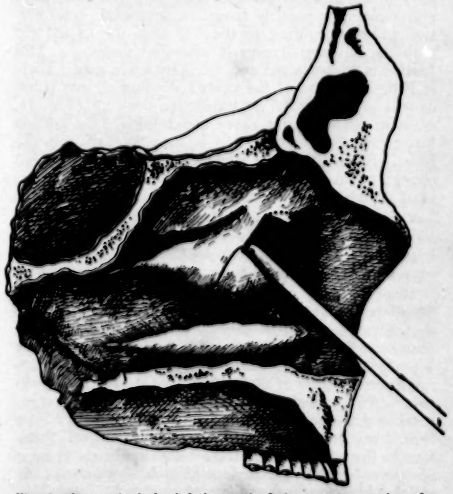

Fig. 4.—Removal of the inferior part of the anterior portion of the middle turbinate with the snare. Dotted lines indicate where snare can be placed if desired to remove any more from upper anterior portion (author's specimen).

tween the septum and the body of the bone, extending up so as to reach above the isthmus. Every portion of the bone which is to be removed is thus in contact with the cocain.

Some of the suprarenalin preparations may be used in this connection or not, as may be desired. On account of the danger of secondary hemorrhage I have not used them of late, instead using the powder at a later stage, as will be explained. These pledgets are left in place until on their removal the patient says he is free from pain at every point where a probe may be used. The alligator cutting forceps is then taken and, with the blades partially opened, is carried in until one blade is above and one below the isthmus; being sure of its position, it is then pushed backward as far as it can be and a cut made, the instrument extracted and the portion cut out removed. If necessary, a second cut is then made directly back of the first and in the same line. This constitutes the first step as illustrated (Fig. 1).

The second step consists of following along the inferior border as far back as the instrument can be carried, depressing the handle as much as possible, and cutting as nearly vertically upward as it can be done. This cut, of course, is not absolutely vertical, rather diagonal (Fig. 2). This leaves the body of the anterior portion of the bone attached by a narrow bony pedicle. The snare with a loop of proper size is then introduced, carefully insinuated in the two openings, and drawn tight. The bone will immediately come away (Fig. 3). So far there has been a relatively small amount of pain although in spite of the cocain there will be some pain when each cut is made, but it is done so quickly that the average patient will not complain much of it or say afterward that it has been very painful. The use of the snare is the most painful part of it. The main body of the anterior portion being now removed, there still remains a possible irregular, somewhat loose portion inferiorly, owing to the fact that the second cut with the alligator forceps is somewhat diagonal. This portion is re-cocainized and the snare again used. There is little likelihood of the snare's slipping at this point, as will be seen by the accompanying drawing (Fig. 4), since it catches easily above and below. This portion being removed, the operation is, as a rule, entirely finished. Should there be any rough portions left or not enough removed superiorly, the further use of the snare or of the medium-sized cutting forceps will remove them.

This method is far more speedy, far less painful, and leaves a much smoother surface than the removal of the bone by biting it away piece by piece with cutting forceps, as is done by many operators.

The next thing is to provide for possible hemorrhage. There will be no bleeding at the time, but it is never safe to send such a patient away from one's office without providing for it. After carefully wiping the surface I apply 12 per cent. solution of acetotartrate of aluminum[1] on pledgets of cotton until I am sure that every point of the denuded surface has been thoroughly touched with it. I then powder the surface with a mixture of one-fourth powdered suprarenalin extract, three-fourths thymol iodid (aristol). I next apply one or more pledgets of cotton, the surface of each of which is completely covered with the following ointment:

R. Bismuthi subnitratis		
Thymolis iodidi, aa	3iss	6
Unguenti zinci oxidi		
Petrolati, aa	3i	30

A sufficient number of these pledgets are put in to occupy the place formerly occupied by the bone, but not to fill the lower meatus, as the inferior turbinate will promptly swell, and they will be retained in place by it and still leave the lower meatus free for breathing. They are left in for two days, are not particularly painful *in situ* on account of being saturated with the ointment, and are removed without difficulty. Some pain invariably follows the subsidence of the cocain anesthesia, and I always give the patient one-eighth of a grain of morphin in my office and another eighth of a grain to be taken an hour or two later should there be pain.

There is but little after-treatment. The pledgets are removed in two days, sometimes in one. They come away without tearing the clot at all, and secondary hemorrhage is rare. Scabbing follows for one or two weeks and is cared for by saline sprays or douches.

The method herewith described concerns chiefly the removal of the anterior third or half of the middle turbinate, since this is usually all that is necessary. In the exceptional cases, should it be necessary or seem desirable, remove the entire bone. This can be done by continuing the cut at the isthmus above with the use of a spoke-shave from behind. I have never found it necessary, however, to remove more than the anterior half.

1. The liquor alumini acetotartratis of the National Formulary is 50 per cent. strength.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

HOW MAY OUR PRESENT METHODS OF MEDICAL ILLUSTRATION BE IMPROVED?*

MAX BRODEL.
BALTIMORE.

In looking over our contemporary medical literature one can not help being impressed with the inadequate character of the majority of the illustrations. This applies to our text-books as well as to our periodicals.

I do not refer merely to the artistic inefficiency of the cuts, which is very evident, but also to the scientific inefficiency.

Our popular magazines and the novels of the day are usually very well illustrated, the pictures are artistic, correct and well printed. Why should the medical literature not keep pace with this progress? It is true that medical illustration requires highly specialized knowledge and skill, which is not acquired in the same manner in which the painter of still life, landscape or portraits acquires his, namely, through simple observation of objects with which he has been familiar from childhood up.

The trouble is that the medical illustrator is not familiar with the objects he is to draw or paint. To him they are obscure in meaning, indefinite in form, and sometimes repulsive in character; as a consequence he shuns original study, the only means of preparing his mind for the work. He is satisfied with a superficial examination, fragmentary conception, and frequently ends up by copying some suitable well-known picture or portions of several pictures from the literature, which he modifies to answer the purpose. The result of this

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

plagiarism is an inartistic, incorrect piece of work, frequently so full of faults that it confuses the reader more than it helps.

This is especially true in regard to realistic or schematic pictures of operative procedures, pathologic specimens, topographic relationships, representations of physical examination. It does not apply with equal force to drawings of objects which retain their form and are clearly visible, such as good dissections on the cadaver or other anatomic work; for example, reconstructions in embryology and microscopic drawings, although even this class of work frequently shows the artist's lack of knowledge. The altered appearance of the structures of the anatomic, as compared with the fresh material, offers many difficulties to the artist, who has no means of differentiating between accidental postmortem changes and the essentials in a dissection.

Microscopic work is nearly always done schematically, i. e., all the cells look more or less alike, the individual differences of the various cell structures being not represented, and the picture frequently looks more like some pretty fantastic pattern than a portrayal of individual cells. Such pictures may be justifiable on the blackboard or in the note-book of a student of histology, but in a pathologic report the microscopic pictures must be realistic and not schematic.

The cause of this inefficiency of medical illustrators and their work is obvious. The scientist has the knowledge and the clear conception of the matter to be illustrated, but, as a rule, he has not the time or the ability to represent it on paper. An accomplished artist usually can draw or paint anything placed before him, provided he comprehends its nature, but this is not the case with medical work, so there is a wide gap to be bridged over. This statement is made in regard to an artist who can draw and paint, but, unfortunately, they are very scarce in the ranks of medical illustrators.

I wish to emphasize this point because it has impressed itself deeply on my mind. It is, indeed, remarkable what a small amount of artistic skill the average medical illustrator possesses. The work is for the most part amateurish in the highest degree; there is no attempt at a correct contour and the simple principles of light, shade and reflex are not observed. It seems almost as though the talented artists of the present day look down on medical illustrating as beneath their level. Anatomy is studied superficially as a handmaid of figure painting, as in the time of the old masters, but anatomic drawing as a handmaid of science has difficulty in finding well-equipped devoted disciples.

It is an error to think that there is no beauty or charm in medical work. The outlines of the various organs of the human body and their detail always possess a certain grace and an interesting character all their own, which offer many delightful problems to the artist. The artist who has made a failure in the so-called higher branches of art, such as portrait and landscape painting and the allied branches, is usually also unfit for medical work.

So what we want and must have is a higher type of recruit for art in medicine; higher in an artistic as well as an intellectual sense, for the artist should be able fully to enter into the spirit of the scientist. It stands to reason that the artist can produce a valuable picture only if his mind has completely grasped the subject. While a description or word picture may pass over obscure or doubtful portions in silence, a drawing must give a clear account of every feature of the case.

There is no doubt to my mind that the most valuable impression, such as would crystallize itself into a picture without undue labor and experimentation on paper, is the one possessed by the scientist. The person whose hands have palpated or felt of the object which is to be pictured and whose mind has passed through the various stages of the evolution of a mental picture, that person is best fitted to preserve that picture on paper.

The artist usually receives his impressions second hand, so to speak, and no description, however vivid, can make him see the object as the scientist's eye sees it unless he is given the opportunity to study it as carefully as the scientist, with eye and hand, until his mental picture equals that of the scientist in clearness and precision. Unfortunately this is not practicable, since the scientist can not well be expected to pay for the education of the artist.

The mental picture is a very important requisite of all medical work, excepting perhaps the microscopic. It is all-important when a diagramatic or semidiagramatic representation is the best means of showing the condition.

The remedy for this difficulty is simple enough, but its application unfortunately is more difficult, viz.: 1, teach the artist more medicine; 2, teach the scientist more art.

1. Medical illustration is a special branch of art and requires a systematic education; therefore, the artist should devote his entire time to it. This branch of art is not taught as are the other branches, although it should be, for owing to the highly-specialized character of medical work, more training and teaching is necessary than in connection with perhaps any other art work. The simple rule laid down to art students. "Copy naively what you see," is by no means enough, for then the drawing would be merely a worthless imitation of a photograph, with all the redundant accidental forms obscuring the essential features. A medical artist's eye should not work merely like a camera, it should digest the object and bring out the features which justify the task of picturing the case, without, of course, neglecting the realistic and truthful characteristics.

Thus, an intelligent drawing is possible only if the artist is thoroughly familiar with other examples, similar in character to the one he draws. He must know the normal form, its variations and the anomalies, finally the minute structure, for nothing guides the pencil more surely than a knowledge of histology. It is with the aid of such accessory studies only that the artist can intelligently interpret the characteristic features of the case before his eye. The education of a medical illustrator should, therefore, begin in the dissecting room and should be coupled with the study of autopsies and histology.

2. It is of equal importance that the scientist should know more about art—the more the better. Of course, I do not mean he should make his own illustrations, although a primitive outline drawing done by a scientist often has more truth in it than an elaborate halftone drawing by an artist. But he should do a little more than has hitherto been the case. The trouble, I am sure, will be amply repaid if he cultivates the habit of sketching his cases in his records for his benefit and that of his co-workers. A glance at such a sketch will years after bring back to one's memory the important features of a case much more vividly than any description. Moreover, such sketches may form an excellent basis for the

work of an artist. I often recollect the splendid little diagrams Dr. Howard A. Kelly used to make for me when I was a novice at the work. These sketches were alive with suggestion, and there was nothing that could have taken their place. Finally, the scientist himself can elaborate such sketches for publication if an artist can not be obtained.

The advantages of this practice are obvious, and I have often noted in the case of medical men, surgeons, anatomists, and also in my own case, how the making of a sketch or a model produced new ideas of benefit to the investigation and how it aided in the discovery of incorrect conceptions and how it pointed out the best method to overcome the difficulty.

The methods I would suggest are as follows. The region or regions of especial interest to the investigator should be drawn from the front, side, or in section, in simple outlines similar to the prints of the rubber stencils now in use, only life size. These outline drawings may be obtained by drawing with india ink on a glass plate placed in contact with the object to be drawn. In order to eliminate the individual element as much as possible, a sufficient number of such tracings are superimposed. This gives the average contour which should be reproduced in some faint gray or brown tint in large numbers in order to serve as a basis for the records. The stencils now in use are not very helpful, since they are in the first place too small to permit of an accurate insertion of tracings of tumors, etc., and then they are so stereotyped in character that they frequently do not suit the purpose; finally they are mostly incorrect. In this day of specialized work almost every physician or surgeon requires a special set of outlines different from the rest. He knows best what he needs and should endeavor to work them out himself. The contours of smaller structures, such as the eye, ear, nose and throat, might to advantage be drawn enlarged; contours of the entire body, on the other hand, reduced.

On such charts the clinician, surgeon, anatomist or pathologist can insert the salient features of a case. He can express topographic relationships by indicating the deepest structures by faint dotted lines, structures less deep by heavier dotted lines or thin solid lines, the most superficial structures by heavy solid lines. He can differentiate diseased from healthy structures by systems of parallel lines or by means of colored pencils, and adhesions by short strokes passing from one organ to another. Various mechanical features, such as tension, pressure, rotation, direction of fluid, etc., are easily expressed by means of judiciously-placed arrows.

Finally, the different steps of an operation may be inserted each on a separate sheet. In doing this various symbols may be adopted. For instance, heavy black or double lines may stand for incisions, loops for ligatures, loops with an arrow at their end for a ligature of tissue which is to be cut; dotted lines will indicate the continuation of the procedure. Parallel lines, 45 degrees to the horizontal, will express a wound surface, parallel horizontal lines, fluid, etc. In conclusion, each diagram should have the name and date and the necessary explanatory notes written on the margin, each note connected by a line with the region or point it elucidates.

The printed outline forms the guide for all this work; it is the linear foundation which prevents the sketch from losing the correct proportions. Specimens, dissections, frozen sections, etc., can be sketched freehand or, which is much easier, with india ink on a glass plate. The eye should be as far away as possible from the glass plate and kept stationary.

If a sketch fails to represent the structures properly the making of a model of either clay or wax, linen, gauze, rubber tubing, wire, etc., will usually solve the difficulty; the required sketch is then made from this model. The amateur, as a rule, has less difficulty with plastic forms than with drawings, but modeling is unwieldy and time-consuming and should be resorted to only in exceptional cases.

I realize, of course, that the physician or surgeon has often no time to spare for sketching. It is surprising, however, how quickly, after a little practice, a sketch is made. It rarely takes more time than writing a description, and the fact alone that what we have once sketched leaves a much deeper impression in our minds than any written description should induce the scientist to cultivate the excellent habit of sketching.

Besides, a scientist who himself has drawn or sketched is more apt to distinguish between the work of a good and a poor artist. It is undoubtedly his duty toward his profession to reject inartistic and incorrect work and thus contribute toward the elevation of the standard of medical illustration and so of medical education.

For the past two years I have endeavored to bring the scientist and artist nearer to each other. I have taught art to medical students and graduates and the underlying principles of medical illustration to artists. The results have been gratifying, and I shall continue to do my share in bridging over the gap between scientist and artist.

DISCUSSION.

DR. WILLIAM J. MAYO, Rochester, Minn., said that medical illustrating is needed in teaching almost more than any one thing. A certain operation placed on a chart before one's eyes can be quickly visualized, when a great deal of time might be taken in reading a description and in figuring out the different steps of the operation. The art of visualizing does not necessarily belong to the highly intellectual. The person giving the least amount of time to study may have so trained his eye with common every day objects in life that he will quickly understand things from a drawing. It is not for the best interests of the patient to bring spectators nearer than five feet of an operation. Therefore, we must depend to a large degree on illustrations such as Mr. Brödel has shown. While many things have been given to the profession by the faculty of Johns Hopkins Medical School, their leadership in medical illustrating has certainly been as valuable as anything else they have done. All must recognize the worth of good illustrations as a means of teaching, and even if the services of so good an embryologist and histologist can not be secured, we can at least be grateful to Mr. Brödel for bringing the subject to our attention.

Exploitation of Human Credulity.—A recent editorial in the *Progrès Médical* remarks in regard to the vogue of "patent medicines" that the public will always be credulous and will always allow itself to be gulled by appeals to its credulity. This is a social evil, it adds, incurable, like prostitution, but it is the duty of the physician to seek to attenuate its effects and to enlighten the public in regard to the dangers of this hideous exploitation of human woes for the benefit of the bank account of the charlatans. In France, besides tuberculosis and venereal diseases, remedies for anemia are widely advertised and delicate stomachs ruined by the preparations sold. The physician must teach the public that the science of therapeutics is a complex and difficult art, and that it can never be reduced to the ingenious but mindless mechanism of an automatic slot machine.

OPERATIVE TREATMENT OF EXSTROPHY OF THE BLADDER BY TRANSPLANTATION OF URETERS ON TO THE SKIN OF THE LOIN.

APPLICATION OF THE PRINCIPLE TO OTHER BLADDER SURGERY—REPORT OF TWO ILLUSTRATIVE CASES.*

JOHN T. BOTTOMLEY, M.D.
Surgeon to the Carney Hospital.
BOSTON.

It is fortunate that exstrophy of the bladder is a relatively rare condition, for its unfortunate possessors are in a pitiable condition and, though surgeons have for years devised and tried many operations for its relief, it can not be said that the procedure is yet known that will afford a cure in the sense of a restoration of the parts affected to a condition even approximating the normal. To effect a cure in that sense, a muscle with sphincteric action must be manufactured—evidently an almost impossible task. Our hope then must lie in relief of the condition, and that by such a procedure as will not expose the life of the patient to too great danger either through the mere technic of the operation or through its more remote effects.

Operations for this malformation are many and various. To those interested Hartley[1] and Orlow[2] offer an excellent summary and extensive bibliography of the subject. Little can be added to these except the Lendon[3]-Peters[4] method and the procedure which forms the subject of this paper. In a broad way the operation may be classified under three heads:

1. Plastic operations which attempt to substitute for the missing anterior bladder wall either skin flaps turned in from various directions (Roux, Nélaton, Wood, Thiersch, Billroth, Pancoast and others) or a separated loop of intestine (Rutkowski and others).

2. Operations which have for their object the formation of a urinary reservoir (Gerody, Czerny and others) or conducting groove (Segond) by freeing the separated edges of the vesical mucous membrane and joining them by suture. To facilitate this procedure, to form a more spacious bladder and to attempt to establish a muscular sphincteric action, ingenious methods have been devised, among the most important of which are separation of the sacroiliac synchondrosis (Trendelenburg), moulding the pelvis by apparatus (Passavant), osteotomy or osteoclasis of the pelvis (Konig, Koch and others) and freezing or transplanting the rectus muscles (Schlange, von Mikulicz and others).

3. Operations which divert the urinary stream by transplanting the ureteral ends into the urethra (Sonnenburg), the vagina (Chevasse, Pawlik, Summers and others), the intestine (Maydl, Gersuny, Frank, Fowler, Lendon, Peters and others) or on to the skin surface of the loin (Harrison).

What may we reasonably expect as a result of any of these measures? There can be no question that if certain conditions could be eliminated and others attained the methods proposed in Classes 1 and 2 would become ideal, for the normal anatomic relation of the parts is preserved and the urine passes through the natural channels—a great desideratum. But the occasional failure to get properly nourished flaps, the frequent tendency to calcareous deposits and to stone formation, obstinate fistulæ requiring numerous operations and, above all, the fact that sphincteric control is practically never obtained[5]—all these factors have combined to bring this class of operation into disfavor or disuse. This lack of sphincteric control makes necessary the wearing of a collecting apparatus over the external genitals—a locality where impedimenta of any kind are particularly disagreeable and uncomfortable. Trendelenburg's procedure and the operations having to do with the pelvic girdle are usually applicable only to the very young and many of them are attended by no inconsiderable risk of life. A series of fourteen Trendelenburg operations has been reported with a mortality of 28 per cent.

Transplantation of the ureteral openings into the vagina or into the urethra is seldom done. The objections to it are evident. The substitution of a separated portion of the intestine for the missing bladder wall is an operation of altogether too great magnitude to be considered as a routine measure.

It is natural that in the absence of a vesical sphincter and in the face of the practical impossibility of forming an artificial one, operators should turn their attention to the feasibility of making use of the anal sphincter by transferring the ureteral ends into the sigmoid flexure or into the rectum. Much brilliant work, experimental and clinical, has been done in this line; the scope of this paper, however, will permit mention of but two methods, both typical and probably the best of their kinds—the Maydl[6] intraperitoneal method and the Lendon[3]-Peters[4] extraperitoneal method, recently modified by Sherman[7] of San Francisco. In both the ureteral ends are transplanted into the intestine, Maydl transferring with the ureters the vesical trigone, Lendon, Peters and Sherman only a small button of the vesical tissue adjacent to the ureteral openings.

No one can doubt that both methods have frequently been followed by results gratifying to both surgeon and patient; the rectum usually tolerates without much difficulty the presence of the urine, while the anal sphincter in the majority of instances does its new duty well; on the other hand, both methods are attended by real dangers. In that class of operations of which the Maydl is a type the peritoneal cavity must be entered, the intestinal canal must be opened intraperitoneally and an intestinal suture must be carried out. All this means that the danger from the operation *per se* is more than nominal. Orlow,[2] in reviewing the results of sixty-one Maydl operations, found that over 8 per cent. of the patients died of peritonitis; the total early mortality was 17 per cent. Other patients died of narcosis, pneumonia, etc., but such deaths do not come into consideration here, because they are incident to all operations. It may be said, perhaps, that with the improved technic of the present day an 8 per cent. mortality from general peritonitis in an operation of this kind would not obtain; be that as it may, the operation is a relatively long and tedious one and the danger of peritonitis either from infection during the operation or from faulty suture must always remain a menace. Druebert's[8] analysis of eighty-two cases operated on by the Maydl method shows a mortality of 27 per cent. within fifteen days after the operation.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. An. Surg., 1901, xxxiv.
2. Rev. de gyn. et de chir., 1903, vii.
3. Trans. Austral. Med. Cong., 1901.
4. Brit. Med. Jour., June 22, 1901.
5. Hartley could find record of but one satisfactory case; this followed a Trendelenburg operation.
6. Wien. Med. Wochschr., 1894, xxv.
7. THE JOURNAL A. M. A., Feb. 4, 1905.
8. Echo méd. du Nord, Lille, 1904, viii.

Now, the Lendon-Peters method avoids this danger and is open to criticism in practically only one particular, i. e., the danger of an early or late infection of the ureter and of the kidney itself from the rectum; this is the strongest objection not to the Lendon-Peters method alone, but likewise to the Maydl and to all other methods of which intestinal implantation of the ureters is a part. Just how great this danger is can be determined only when the lapse of time has been sufficiently long to permit the collection of a large number of cases and the study of their postoperative condition over a number of years, for the renal infection may come early or late in the postoperative course.

In the Drucbert[8] series one-half the early mortality was due to double pyelonephritis; on the other hand, he reports one fatal case thirty-four months after the operation and Orlow another two and one-half years after operation. Yet it must be borne in mind that all these deaths from pyelonephritis are not to be attributed to intestinal implantation. The pyelonephritis may precede the operation, for the exstrophy itself promotes its inception. Orlow quotes Berger to the effect that of seventy-four patients born with exstrophy only twenty-three passed the twentieth year of life, the others dying of pyelonephritis. However, this predisposing influence affects the results of all methods of operation equally. From a study of the statistics it seems fair to assume that one-third of the total mortality following intestinal implantation is due to the implantation itself and that a fatal pyelonephritis may be expected in about 12 per cent. of the cases that survive the fortnight immediately following the operation.

Besides, mention must be made of the fact that, following intestinal implantation, there is occasionally diurnal incontinence, more frequently nocturnal incontinence and sometimes both. Now and then, according to Walsham,[9] there is difficulty in keeping the ureteral orifices open. In seven cases of the Orlow series a fecal fistula followed the operation.

In 1896 Reginald Harrison[10] treated a case of exstrophy of the bladder by removing the kidney on one side and, after a lapse of time, transferring the cut end of the ureter of the remaining kidney to the skin of the corresponding loin. The vesical mucous membrane was not removed, but was left to cicatrize and contract. Why Mr. Harrison removed one kidney is not apparent; it is certainly an unnecessary, harmful procedure and has nothing to recommend it. His, I think, is the only case of exstrophy other than the one now reported in which the ureter has been intentionally transplanted onto the skin surface. I was in ignorance of the existence of this case when I operated on mine.

My technic differs from Mr. Harrison's in that I removed neither kidney, but transferred both ureters to the skin of the loin. Of course, the ureters have often been transplanted on to the skin of either the abdomen or the loin because of injury in the course of other (usually gynecologic) operations. Bovée[11] collected ten such cases, including Harrison's; to these I can add a case of Bardenheuer (reported by Thelen[12]) and two cases of my own.

The postoperative history is known in nine of these thirteen cases. Walsham[9] reports that Harrison's patient died after some months of pyelonephritis. Extension of the malignant disease for which he originally operated caused the death of Le Dentu's[13] patient in one month; the kidneys were microscopically intact. Pozzi,[14] three months after the ureteral implantation, removed the kidney; here, too, microscopic examination proved the kidney to be normal. Chalot's case died of shock following a hysterectomy in the course of which he found it necessary to transplant both ureters. After a similar operation Budinger's[15] patient succumbed to a renal abscess caused by an infection which, the operator admits, had long preceded the operation. Recurrence of the original malignant disease proved fatal to Fullerton's[16] case four months after operation; the kidney had practically ceased functionating before operation; moreover, placing a catheter in the opening of the transplanted ureter, as was done in this case, was unwise, for such a procedure must be conducive to infection. Noble transplanted a ureter because of an injury received in the course of an operation for the removal of an ectopic pregnancy; later he removed the kidney, but no note was made of its condition. Bardenheuer[12] sutured a ureter into an operative wound in the loin under the most unfavorable conditions; recovery followed.

My patient, a young woman with exstrophy, is alive and entirely comfortable eighteen months after implantation of both ureters in the loin. An old woman on whom I did a similar operation as a preliminary to removal of the bladder survived the transplantation and was comfortable; she succumbed, however, to cachexia seventeen days after removal of the bladder.

In but one of these cases can death be attributed to the transplantation. It is claimed that Harrison's case died of pyelonephritis due to an ascending infection from the eroded and ulcerated skin surface. Harrison, however, imposed a most severe handicap on his patient by removing one kidney. Moreover, there is no way of knowing what amount of intelligence and cleanliness was exercised by the patient in the after-care; a certain amount of both these qualities is requisite. A death should not be attributed to a method when the fault is a purely personal one; hence, in all fairness, the evidence in this case against the method is not strong.

What objection can be urged against the implantation of the ureters on the skin? (a) The danger of infection of the ureter and kidney because of contraction of the orifice or of excoriation of the skin in its immediate vicinity. (b) No sphincter is provided.

First, as to the danger of infection. I believe that, given healthy kidneys before operation and granted intelligent care and cleanliness after operation, infection of the kidney will rarely if ever result from skin implantation. Naturally if a patient takes no care of the skin in the neighborhood of the orifice, if the area is allowed to become excoriated and inflamed and if no measures are taken to prevent or to check these occurrences, then it must be granted that the chance of infection is very considerable, but this is not the fault of the method; it is the fault of the individual. After eighteen months the skin of the loin of my patient is still perfectly healthy. Were contraction of the orifice to begin, its treatment could be easily undertaken.

It must be admitted that no sphincter is provided by this operation. This is a legitimate objection to the

9. The Practitioner, 1899, 151.
10. Lancet, 1897, 1091.
11. Trans. Am. Gyn. Soc., 1900.
12. Centrbl. für Chir., 1882, xii.
13. Affect. chir. des reins, etc., Paris, 1880.
14. Des blessures de l'urétère au cours de la lap., Ann. des mal. gen. urin., 1891, 539.
15. Arch. für klin. chir., 1894, lxviii.
16. Am. Gyn. and Obst. Jour., 1898, xii, 91.

method and is a disadvantage, but I believe that this disadvantage is more than counterbalanced by the greater safety afforded the patient. An apparatus can be provided that will keep the patient dry and which can be worn with but little inconvenience. The patient is comfortable and, in my opinion, is in much less danger of developing pyelonephritis than if the ureters were implanted in the intestine, for, looking at the question from a purely common-sense point of view, it seems as if we must regard the skin surface of the loin as a much cleaner locality than the mucous coat of the intestine; it seems evident, too, that it is a far easier matter to keep a skin surface clean than to care for a mucous surface properly.

The question that the surgeon must decide is: Shall I do a rectal implantation with a very considerable chance of fatal renal infection and with a sphincter that usually acts well but may not, or shall I transplant onto the skin of the loin, with no sphincter, but with, I believe, practically no danger of future renal infection, if an effective collecting apparatus be used and proper after-care be assured?

The principle exemplified in this operation has a still wider range of usefulness. As far back as 1886 Ballance and Edwards,[17] after experiments on the cadaver, recommended implantation of the ureters on to the skin of the loin as a preliminary to all operations in which removal of the bladder is contemplated and in conditions by reason of which the pelvic ureters are pathologically or physically involved. They made drawings showing the ureters in their new relations. They recall the experimental work on animals by Gluck and Zeller,[18] who were strongly disposed in favor of skin transplantation. Le Dentu's idea is in harmony with that of Ballance and Edwards, and he pictures an apparatus for collecting the urine. Mr. Reginald Harrison[19] also coincides with their views. No one, as far as I know, actually followed out these suggestions. In one case, the history of which will be found at the end of this article, I had an opportunity of employing the measure as a preliminary to removal of the bladder and with so much satisfaction that should a similar opportunity again present itself I shall not hesitate to take advantage of it.

Even if so radical an operation as removal of the bladder be not contemplated, this method of diverting the urinary stream and thus alleviating severe symptoms may be considered simply as a means of relief, as, for instance, in intractable or inoperable vesical disease.

Watson,[20] in an excellent article on tumors of the bladder, strongly advises nephrostomy as a preliminary to removal of the bladder. He prefers it to ureteral implantation of any kind; the latter, he says, is often followed by renal infection, while it is "very rare to have the kidney infected after nephrostomy, provided adequate drainage be provided." While thoroughly agreeing with Watson that the urinary stream should be diverted in such cases and fully coinciding in his view of the dangers of intestinal implantation, I must take issue with him as to the superiority of nephrostomy over implantation of the ureter on to the skin of the loin. The argument most strongly urged against implantation is the high mortality attributed to it. An investigation of his statistics with regard to this mortality leads me to believe that he is in grave error when he ascribes 40 per cent. of the total mortality in such cases to the implantation itself. Apart from my personal cases and that of Bardenheuer, we both quote the same group of cases of skin implantation. On examining the original reports of these cases, I could find but one in which the fatal result could be attributed in any way to the implantation; this is the case of Mr. Harrison which I have previously discussed.

To me skin implantation appeals more strongly than nephrostomy; it is a more surgical procedure, its accomplishment is fully as easy and it injures less important structures, the danger of renal infection is at least no greater and the resulting conditions are more easily and just as successfully cared for by a collecting apparatus. After all, the most important thing is not the measure, not the method, but first, last and always the principle and the result.

17. St. Thomas Hosp. Reports, New Series, 1886, xvi.
18. Arch. für klin. chir., 1881, xx.
19. Surg. Disorders of the Urinary Organs, fourth Ed., 1893.
20. Anns. of Surg., 1905, lxii.

A CASE OF EXSTROPHY OF THE BLADDER.

History.—The patient was an otherwise healthy young woman, 28 years of age and unmarried. She was in the usual wretched condition of these unfortunates.

Operation.—Jan. 19, 1906, the following operation was performed, my colleague, Dr. Munro, working on the left side, I on the right. A four-inch incision was made, following in a general way the crest of the ilium, about one inch above and to its inner side. The external oblique aponeurosis and muscle was split in the direction of its fibers; the deeper muscular layers were divided sufficiently to allow the peritoneum to be pushed forward; the ureter was freed by blunt dissection for several inches of its length, divided where it crossed the iliac vessels, the distal end ligatured and, through a stab wound in the loin, the end of the proximal portion was brought to the surface and fastened to the skin by chromic catgut sutures which did not penetrate the mucous coat. The end of the ureter, which projected about one-eighth inch, was split and the flaps thus formed were turned outward and sutured. The anterior abdominal wound was sutured in layers. Neither shock nor disturbance of the urinary function followed the operation.

Second Operation.—Two weeks later the patient was again etherized. The vesical mucous membrane was removed and with it the distal portions of both ureters, which were easily freed by blunt dissection. During the operation the peritoneal cavity was opened; the rent was closed immediately. The skin margins about the denuded area were widely freed and by a suture line which took the form of a T, the area was well covered. Temporary drainage was established.

Postoperative History.—Complete recovery followed. An apparatus, furnished by Leach and Greene of Boston, keeps the patient dry; the urine collects in a bag hung to the inside of her skirt. She is very comfortable, has gained much weight, works in a department store and has no urinous odor about her. The urine is normal. At first the apparatus was not effective when the patient was lying down, but this difficulty has now been overcome by the apparatus makers. The apparatus wears out quickly and in the experimental stage had to be replaced frequently.

A CASE OF GANGRENOUS CYSTITIS.

History.—The patient, a woman, 54 years old, was senile; her arteries were atheromatous, she was scoliokyphotic and her general condition was wretched. A vesical stone had been crushed some weeks previously. Subsequently a most severe cystitis caused her constant and almost intolerable suffering. Ten days before she came under our care an unsuccessful attempt to alleviate her distress had been made by forming an artificial vesico-vaginal fistula. The operator was a very competent surgeon, who noted: "By bimanual examination her bladder is solid and stiff-walled and can not be compressed; it feels just as if it were covered with plaster-of-Paris."

Operation.—Under ether, Feb. 2, 1907, an operation similar to the one described in the preceding case was done. The thickened right ureter clearly showed chronic infection. Dur-

ing the operation a large, tuberculous, retroperitoneal gland was removed from just above the pelvic brim on the right. The preliminary operation gave the patient much relief; her general condition improved greatly. Two weeks later the bladder was removed. This was a difficult undertaking; for the wall was a thick, calcified mass enclosing numerous areas of gangrenous slough and pus; the tissue was friable and fragile. The cavity left after the removal of the bladder was packed; the peritoneal cavity, opened during the manipulations, was drained. The patient rallied well from the operation, but soon after began to fail, gradually grew weaker and died on the seventeenth day. I think now that I would have acted more wisely had I been satisfied with the preliminary operation and not attempted the removal of the bladder.

[FOR THE DISCUSSION, SEE THE DEPARTMENT OF SECTION DISCUSSIONS IN THIS ISSUE.]

THE ETIOLOGY AND RECENT TREATMENT OF HAY FEVER.*

H. HOLBROOK CURTIS, M.D.
NEW YORK.

The factors which enter into the causation of hay fever, or better, hyperesthetic rhinitis, a name proposed by Sajous, are: First, a nervous element; second, a pathologic change in the nasal mucous membrane; third, an exciting constitutional dyscrasia, as a lithemic or uric acid diathesis; and fourth, some adventitious irritation, as dust, pollens or animal emanations.

1. Hyperesthetic rhinitis may occur from an adynamic state of the nervous system irrespective of other causes, or may result from a combination of external irritation and a predisposing neurotic factor. The first class is illustrated by the cases of spontaneous attacks accompanied by sneezing and lachrymation, occurring at any time of day and irrespective of the season. Cases of this character demand a careful investigation as to the cause of nervous trouble, and as treatment, toning up of the general system by baths, exercise, diet, etc., I can not help mentioning a tablet which has given very excellent results in this class of cases:

R.	Strych. arseniatis	gr. 5/6	054
	Atropin. sulph.	gr. 1/3	02
	Camphor	gr. xxv	1 62
	Ipecac. pulv.	gr. v	32

M. et ft. in pil. No. c. Sig.: One of such pills p. r. n.

From three to six a day have a very favorable effect. Those cases resulting from an external cause in combination with a neurotic susceptibility will be considered later.

2. Hyperesthetic rhinitis may be due to pathologic changes in the nasal mucosa, which may arise from polypi, deflections of the septum, hypertrophies, synechiæ, etc. The simple correction of these conditions may effect a cure of the disorder. For this reason before condemning any remedy we should be careful to ascertain that the nasal respiratory tracts are free from abnormalities.

3. Hyperesthetic rhinitis may arise from a lithemic or uric acid condition, as found in subjects of gout, rheumatism, obesity and disorders of digestion. In these cases we may have a change in the epithelium of the nasal mucosa or an indirect action through derangement of the sympathetic nervous system. Remembering how frequently brittle finger nails and hang nails, together with itching scalp, are concomitant symptoms of uric acid excess, may it not be reasonable to suppose that a similar influence might be exerted on the epithelium of the nasal mucosa? Autointoxications caused by intestinal fermentation are also a prolific cause of nasal irritation, probably due to excitation of the sympathetic ganglia. Digestive disturbances should be eliminated by proper treatment before judging the value of any remedy, especially if it is supposed to be simply antitoxic as regards excitation of the mucosa from pollens.

4. Hyperesthetic rhinitis may be produced by dust, drugs, perfumes, animal emanation and many pollens. We are all familiar with travelers' hay fever, caused by tunnel gases and coal dust, elephant and even cat hay fever (banish the term), and the evidence is very convincing that some individual predisposition is essential to the development of all of these.

We have mentioned various causes which produce hyperesthetic rhinitis independent of any external irritation. The question that naturally suggests itself is this: How much of a predisposing influence do any of these causative factors of hyperesthetic rhinitis exert in rendering an individual susceptible to the reaction of pollen toxins? It may be in the range of possibilities to suppose that a constitutional disturbance might render the sympathetic system very near the state of inhibitory collapse, without exhibiting the vasomotor phenomena usual in hay fever, and that only the slightest local exciting cause as dust, odors or pollens was wanting to make the intoxication complete. Unless this were more than hypothesis it would be difficult to explain the extreme ganglionic explosion caused by simple dust or odors. There has been no more beautiful illustration of the effect of shock impressions conveyed through the sympathetic ganglia than that classical investigation of Dr. Weir Mitchell, when an army surgeon, as to the reason why a soldier shot through the ulnar nerve always fell, when a wound of the radial nerve, though a larger nerve, produced no such result. In this case a clever dissection showed that the cervical sympathetic ganglion which supplied the ulnar nerve intercommunicated by fibrillæ with the otic ganglion which supplied the labyrinth, the center of equilibrium. The shock which produced the explosion in the otic may be compared to a toxin shock which affected the sphenopalatine ganglion, reacted on the vagus through the collateral fibers in the medullary substance of Rolando, the receptive nucleus of the trigeminus, thus producing the picture of the asthmatic type of hyperesthetic rhinitis.

So much for the etiology of this puzzling and complex disorder. In regard to the recent treatment, a brief sketch of the subject will introduce the discussion. The various views of the disputants may lead us to a better estimation as to the efficiency of a newer remedy than it has been the good fortune of the writer to discover. One thing is apparent, that the personal element, viz., suggestion, enters largely into the result of treatment. Note in the literature the results of the men who have been dominated by their convictions, as compared with the result of the experiments of the skeptical observer. So also with the patient. It was found with ambrosia that patients of the neurotic type who believed that a specific had been discovered were rapidly relieved, a fact which caused initial results to exceed those of the fourth season of experimentation. I well remember the fifteen tuberculous patients in the Home for Consumptives who were treated under my observation by the first serum of Koch. In every case

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

there resulted lowering of afternoon temperature, decrease of cough and expectoration and great improvement in the general strength until, alas, one day an article appeared in the *Tribune* saying that the great Virchow had stated that the improvement noted in the treatment of patients by Koch's lymph was of a temporary character and that the injections were but disseminating the foci of infection. The paper passed around the ward, and from that instant, the element of hope and confidence being removed, every chart showed a return to the old conditions. In the case of tuberculin the pendulum undoubtedly swung too far in the other direction. Let us accord to pollantin a just trial and only relegate it to the list of failures when we are convinced that in uncomplicated cases it does not fulfill the conditions and claims set forth by Professor Dunbar. A short sketch of the development of the antitoxin theory will not be out of place.

In the spring of 1900 I read a paper before this Section in which the theory of prevention of hay fever caused by various pollens was discussed and cases cited in which, by hypodermic injection of a watery extract of the pollens of ragweed, golden-rod and lily-of-the-valley, cures had been effected.[1] In these cases immunization was supposed to have been effected by habituation of the individual to the point of toleration of the drug.

Subsequently the hypodermic method, on account of the disturbances which frequently followed its use, was replaced by the internal administration of fluid extract of the respective pollens of ambrosia, solidago and convallaria, used separately and in combination.

It is interesting to note that the first responses to the circular sent with every bottle of ambrosia at the request of physicians were generally of an enthusiastic and favorable character, more than 60 per cent. reporting great improvement or cures.[2] How much of this was due to the season of 1900 and how much was due to the effect of a novel remedy on neurotic patients it is difficult to determine. In 1902 no more samples were sent to physicians, but some four thousand bottles of the remedy were dispensed on the reputation the medicinal virtues of the ambrosia had acquired.

In 1903 the fluid extract of ambrosia (artemisiæfolia) was mixed with that of solidago (odora) five drops of each to the dram of aromatic water. Besides advising that the internal administration of the ambrosia mixture be begun ten days before the attack was expected, it was suggested that a solution of adrenalin chlorid in Dobell's solution, with two drams of ambrosia to the ounce, be employed as a nasal spray during the acute attack. The results of the combined remedies were excellent, but it was difficult to arrive at any positive facts concerning the real value of the remedy, as adrenalin was so important an adjunct to the treatment. When Professor Dunbar published his first paper[3] I gladly relinquished the field to him, as it was apparent that his experiments were conducted on a more scientific theory and in a much more satisfactory manner. While I had simply relied on the extract made from fresh pollen, he had gone farther by extracting the active principle and preparing an antitoxic serum which he obtained by inoculating young high-bred horses. The active principle obtained by Dunbar reacts on susceptible patients in a normal salt solution of 1 in 40,000. The active toxin is soluble in ether and water and is precipitated by alcohol responding to the albumin tests; it is, therefore, a tox-albumin. After trying goats, rabbits, etc., Dunbar found the horse the most susceptible to the toxin reaction, and after injecting increasing amounts for months, found all the animals so treated to possess a blood serum of more or less definite strength.

A unit of value is represented by an antitoxin which will neutralize an equal volume of toxin solution. The strength of the antitoxin may be pushed to the extent that one volume of antitoxin serum from good horses neutralizes forty volumes of toxin solution. This is called "forty fold" serum.

As the serum does not remain stable, and from the fact that preservatives are apt to cause irritation of the membranes to which the serum may be applied, the next step in the progress of Dunbar's experiments was that of supplying the serum in an evaporated form as powder, to which was added sugar of milk or some bland substance. The method of employment was to place a small particle of powder known as pollantin on the lower eyelid by means of a brush, or on the mucous membrane of the nose by means of a spatula or a Goldstein powder blower.

Hay fever in Europe is due to the pollen of wheat and rye, and on those grains Dunbar has chiefly done his work. Recently, however, he has made a ragweed and golden-rod pollantin, which is prepared for the American market by Schlimmel & Co., of Leipsic. Professor Dunbar instances his own case, which in 1904 he cured in Scotland by pollantin, and then coming to the United States and waiting for an attack, he speedily cured the same by golden-rod (Solidago) pollantin. Dunbar himself admits that however satisfactorily the pollantin has worked in many cases he is not satisfied that it is a specific. McBride of Edinburgh reports[4] positive results in three out of four causes. Sir Felix Semon[5] reports satisfactory results in twice the number of cases. Finke[6] takes opposite views. Schadle of St. Paul in his experiments claims that in hay fever he finds a fluid of butter milk consistency filling the cavities of the antra. Loeb[7] of St. Louis has written an exhaustive article highly commending the virtues of the Dunbar treatment. He advises against the employment of too large doses and warns us not to confound false hay fever or vaso-motor rhinitis with the true variety.

McCoy[8] of Philadelphia has extolled the serum treatment, having in 1903 had great success, but in 1904 he was not so fortunate, but believes that he employed too large doses.

Knight[9] of New York reports 219 cases collected from eighty-one physicians, which are summarized as follows:

Effectively benefited, 114, or 52 per cent.
Partially benefited, 66, or 30 per cent.
Not benefited, 39, or 18 per cent.

Of the total number of cases, there were among them 68 asthma cases. Of these there were:

Effectively benefited, 30 or 44 per cent.
Partially benefited, 26 or 36 per cent.
Not benefited, 13 or 20 per cent.

This corresponds closely to results of Lübbert and Prausnitz.[10] Somers of Philadelphia[11] in 1903 obtained

1. N. Y. Med. News, July 7, 1900.
2. N. Y. Med. Rec., July 13, 1901.
3. Zur Ursache u. specifischen Heilung d. Heufiebers, 1903, Deutsche Med. Wochschr., 1903, ix; Reps. Berliner klin. Wochschr., 1903; Anns. of Otol., Rhino. and Laryngol., June, 1905.
4. Edinburgh Med. Jour., July 18, 1903.
5. Brit. Med. Jour., July 18, 1903.
6. Therap. Monatschr., December, 1904.
7. Anns. of Otol., Rhino. and Laryngol., June, 1905.
8. N. Y. Med. Jour., 1903, xxi.
9. Med. Rec., March 10, 1906.
10. Therap. Monatschr., 1904, 175.
11. Phila. Med. Soc. Proc., Dec. 31, 1904, and Laryngoscope, May, 1906.

gratifying results in nine out of ten cases. Since 1903 the results have been quite as satisfactory. The more recent experience, however, has cleared up certain doubtful points, viz: The vernal type, though greatly ameliorated, runs its usual length of time.

In the autumnal catarrh the antitoxin shows its superior qualities. The asthma and dyspneic symptoms disappear a few days later than the others, but its effect here is remarkable. Errors in diagnosis play the greatest part in the failures. In treatment by antitoxin the results would be better if commenced before the intumescent period, so that the powder or serum could be more readily absorbed. The smallest dosage is to be used and repeated every ten minutes if necessary. Especially it should be given on first going out of doors.

His chief conclusions, as a result of his larger experience, are:

1. The antitoxin produces a prompt and positive amelioration of the symptoms of hay fever in a large majority of cases.

2. In a smaller number, this is accompanied by complete disappearance of the affection for that season.

3. Where slight or no action is seen, it is due to improper administration; while in a small number, some idiosyncrasy is undoubtedly active.

4. When results are obtained, it favorably influences all the manifestations of hay fever in the larger number of cases; while in a smaller class, one or more of the symptoms seem to be most markedly influenced.

5. When given during the attack irrespective of its severity, it produced palliation rather than an absolute cure.

6. When successfully used during one season, it does not prevent the reappearance of the disease the following season, although there is reason to believe that a slight influence in modifying future attacks does exist.

7. The antitoxin is effective in both liquid and powder form, but the latter is preferable, as it is staple, does not require a preservative and is more convenient for the use of the patient.

Joachim[12] of New Orleans has written a most comprehensive paper, to which is referred any one who wishes to know every detail of the preparation of the pollen toxins and their antitoxins. In this monograph it is asserted that the antitoxin of one grain as rye will neutralize the toxin solution of golden rod. This fact suggests the possibility of an antitoxin being discovered which will eventually be a universal curative agent and prophylactic against all pollen coryzas.

In response to three hundred inquiries made by me of specialists as to their opinion of the value of the Dunbar preparations, it is interesting to note that in the responses a great majority state that without the removal of spurs, ridges, etc., the treatment has been unsatisfactory.

It must be a surprise to bacteriologists to find that the theory of micro-organic toxins and their side-chain immunizing antitoxins as demonstrated by Ehrlich should hold good for the toxins of vegetable pollens and their antitoxins. If it be truly a fact that pollantin will cure a limited class of cases properly diagnosed we must accord honor to whom honor is due. All widely-heralded specifics are satisfactory at first, so is Christian science; but truth in the end will prevail and by careful dissection we will eliminate the bad from the good, and only by means of such discussions as this which I am formulating can we discover what is good. It will be interesting to give a few abstracted replies to my 300 inquiries as to the effect of the Dunbar treatment, to illustrate the difficulty of obtaining statistics from widely-separated experimentors.

D. H. Trowbridge, Fresno, Cal.: Dunbar's treatment used in a few cases with only partial success. I have had marked success by removing the turbinates with several entire cures. I have found adrenalin efficacious in many cases.

John J. Kyle, Indianapolis: I have never seen any cures from pollantin. As regards adrenalin and its tendency to cause arteriosclerosis, I call attention to article of Pearce and Stanton.[13]

H. L. Swain, New Haven, Conn.: It will take many years to determine its value and limitations (pollantin). In some cases it seems to act favorably. Adrenalin gives unquestioned comfort, if not complete relief, to many a victim.

Walter J. Freeman, Philadelphia: I have used the Dunbar treatment in a few cases with not sufficiently encouraging results for further trial.

F. C. Ard, Plainfield, N. J.: I have used pollantin in a few cases only, the results were not particularly satisfactory.

T. P. Berens, New York City: Have not used it myself, but judge from about twelve cases which have been reported to me by others that about nine of the patients have received decided benefit.

Urban G. Hitchcock, New York City: I have had most gratifying results by the use of adrenalin solution given internally and as a nasal spray.

J. M. Ingersoll, Cleveland, Ohio: I have used the Dunbar treatment considerably during the past three years. With intelligent cooperation on the part of the patient a large percentage obtain very marked relief. Old cases are not as amenable as recent ones, but receive benefit.

Thomas J. Gallagher, Denver: I have found benefit in cases occurring in June and July; in those of August and September the results were very unsatisfactory, though the appropriate serum was used.

L. C. Cline, Indianapolis, Ind.: I tried pollantin on several patients with no better results than with adrenalin and bromids; with either treatment patients do better who remain indoors.

George C. Stout, Philadelphia: I would say that I have come to regard Dunbar's serum as a routine beginning treatment. It has given excellent results in 60 per cent. of all cases, and has improved nearly 30 per cent. of the remainder, even when the patients were not confined to the house. The powdered form of pollantin has proved most popular. Ambrosia has materially benefited a few cases. The percentage of improvements would probably not be higher than 10 per cent. In selected cases the application of 10 per cent. solution of chromic acid (after cocainization) to the vaso-dilated area has been very beneficial. Modified adrenalin sprays have been successful enough to warrant their use in many cases. In all hay-fever cases which come to me between the attacks I aim to restore the nose to a normal anatomic condition before the onset of the attack.

Frank E. Miller, New York City: Have found the Dunbar treatment of very great value. While not a specific, it brings great relief.

George E. Keiper, Lafayette, Ind.: Have used Dunbar's serum with no effect.

J. Payson Clark, Boston: Have used Dunbar's pollantin the past two seasons with marked benefit in a majority of cases.

John Dunn, Richmond, Va.: Have used Dunbar's treatment in several cases. In no case did it prove of the slightest benefit.

B. S. Booth, Troy, N. Y.: Professor Dunbar's treatment combined with adrenalin 1 to 5,000 nasal spray has controlled every case on which I have used it.

Francis R. Packard, Philadelphia: I have used Professor Dunbar's treatment in exactly six cases of hay fever, in every one of which it was a complete failure. I unfortunately suffer from the complaint myself, and tried the remedy on my own person with the effect that it made me considerably worse. I do not believe that there has been yet found any specific. My own treatment is to correct any pathologic conditions which may exist in the nasal cavities, to

12. New Orleans Med. and Surg. Jour., 1904, lvi.

13. Jour. of Exper. Med., 1906.

administer strychnin and arsenic internally, and to constringe the tissues with a weak solution of adrenalin.

J. SOLIS-COHEN, Philadelphia: I have used Professor Dunbar's treatment with success on some patients, and with indifference and absolute failure on others. Last year I found very excellent results in a powder used in the same way and composed of suprarenalin 1 part, magnesia silicate 450 parts, heavy magnesia carbonate 450 parts, and compound zinc stearate 100 parts. I always try to attend to constitutional conditions no matter what tropical measures may be employed, and make my patients use as loose and light clothing as they can be comfortable with, make them abstain from stimulating and spicy diets, avoid mental excitement and keep their emunctories in good working order. My daughter still pins her faith to liq. ambrosia.

F. T. ROGERS, Providence, R. I.: Have used the Dunbar treatment in four cases the past year. The result in three was absolutely nil. In one the severity of the attack was lessened.

F. E. HOPKINS, Springfield, Mass.: I still cling to adrenalin.

JOHN V. MACKENZIE, Baltimore: For my views on the Dunbar treatment I must refer you to a previous paper.[14] The pollantin relieves some temporarily, has no effect in many, aggravates the trouble in not a few. Among my friends and acquaintances, lay and professional, the general consensus of opinion is that while Dunbar's work is a model of scientific and laboratory research, it is at the same time virtually barren of practical result. I delivered the annual address last Friday before the Students' Club at the Jefferson College, in Philadelphia, and took as my subject the "Pathogenesis of Hay Fever." In conversation afterward with some of the leading men there, I found that they had abandoned the Dunbar serum from failure to get results.

W. G. B. HARLAND, Philadelphia: I have used pollantin in ten cases. It has afforded some relief in four, which were of an especially nervous type.

OTTO J. STEIN, Chicago: I have somewhat modified my enthusiasm since my paper,[15] read before the Chicago Medical Society in 1905. Chiefly on account of the patent feature and style of package. While success has been attained in some cases with ambrosia and other drugs, must candidly admit that pollantin has given best results.

NORTON J. WILSON, Elizabeth, N. J.: Pollantin is to my mind the nearest approach to a specific which has been put on the market.

E. FLETCHER INGALS, Chicago: I tried Professor Dunbar's treatment quite exclusively, but without much success except in one case. A patient after first using it told me that he had never had anything relieve him so much in his life, but I saw him about a month later and in answer to my inquiry how he got along, said that he had had a very bad time and that the remedy, like all the others, had proved useless.

JAMES A. THOMPSON, Cincinnati: I have not used the Dunbar serum. Late last fall I received from Parke, Davis & Co. a ragweed serum that was wonderfully effective in one case. In another it had comparatively little effect. The serum was received so late in the fall that I treated only two patients with it. I have been using for several years a treatment that has proved very effective. The nose is first sprayed with a 1 to 8,000 solution of adrenalin chlorid. Five minutes later with a powder blower the membrane is covered with a powder containing equal parts of stearate of zinc and boric acid. Dunbar's experiments have shown that the toxic portion of the pollen is soluble only in alkaline solutions. By a repetition of this treatment at short intervals you can keep the nasal secretions mildly acid and relieve irritation so that 75 per cent. of your patients can go about their daily work in comfort. This treatment has proved so effective in my cases that I have not resorted to the Dunbar serum.

L. M. HURD, New York City: I have found benefit in about 50 per cent. of cases. Adrenalin seems to give as good results.

ROBERT LEVY, Denver: My results in 1906 have been sufficiently gratifying to warrant me in continuing the Dunbar treatment.

P. F. GILDEA, Colorado Springs, Colo.: In twenty-five cases treated with Dunbar serum last season the results were as follows: Ten total relief, ten partial relief and five received no benefit.

DUNBAR ROY, Atlanta, Ga.: I have used pollantin for two seasons in a limited number of cases, with no decided results one way or the other.

GEORGE A. RICHARDS, Fall River, Mass.: I have only heard of negative results from patients who have used pollantin.

Dr. Richards uses adrenalin chlorid in normal salt solution 1 to 14,000. He finds aristol alone, or combined with stearate of zinc, or powdered suprarenalin very efficacious applied with a powder blower. Itching eyes are controlled by a drop of 10 per cent. to 20 per. cent. solution of argyrol. He gives extract of belladonna or atropin internally until dryness of throat is produced, after this occurs the doses are diminished.

T. W. CORWIN, Newark, N. J.: I consider pollantin the remedy of choice. If results are not almost immediately obtained, the remedy is useless.

Dr. Corwin sent tabulated report of twenty-one cases, the control being full and satisfactory in thirteen.

B. R. KENNON, Norfolk, Va.: I have used Professor Dunbar's in four cases, two of which were much benefited; the other two reported no effect.

ROBERT LEVY, Denver: I am pleased to say that my experience during the summer of 1906 with 18 cases, only 4 of which were not relieved, warrant me in continuing the pollantin treatment for the present.

Dr. Levy, after failures in the Dunbar treatment, visited Hamburg, and an interesting account was published[16] of his conversion by Professor Dunbar.

SUMMARY.

A careful study of the facts at my disposal leads me to the following conclusions:

1. Hay fever is a disorder amenable to no specific treatment.

2. The number of cases of hyperesthetic rhinitis from other causes than rag weed and other pollens is about one-third of the total number.

3. About one-third of the cases supposed to be due to pollen reaction may be relieved by constitutional and surgical methods of treatment. Predisposition to attack in these cases being due to definite causes, would suggest the theory that induced enervation of the sympathetic was an important etiologic factor.

4. Primary intoxications may take place from pollen toxins in cases where the sympathetic system apparently is not previously enervated. These cases, theoretically, should react to antitoxin treatment.

5. The consensus of opinion to-day is against the claims made for pollantin, though observers who have been instructed personally by Professor Dunbar indorse unqualifiedly the great benefit to be derived from the treatment.

6. Medically the suprarenal capsule products hold the first place to-day in the treatment of hyperesthetic rhinitis.

7. The importance of constitutional treatment as an adjunct to any local application is of supreme importance.

8. The best of all treatments yet found is the climatic, with previous attention to nasal conditions.

118 Madison Avenue.

[THE DISCUSSION ON THIS PAPER AND THAT OF DR. KYLE WILL APPEAR LATER IN CONNECTION WITH THE LATTER PAPER, WHICH IS NOT YET RECEIVED.]

14. Trans. of American Laryngol. Assn., 1905, 265.
15. Chicago Med. Rec., April, 1905.
16. Colorado Med., April, 1906.

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SATURDAY, JULY 13, 1907.

ABDOMINAL ARTERIOSCLEROSIS.

The importance of arteriosclerosis as a cause of obscure abdominal conditions has not yet received wide recognition. The more common manifestations of the disease are now well known, and the fact that arterial lesions are apt to be associated with a clinical picture in which intermittency is one of the striking features is appreciated so far as certain organs are concerned. In proof of this, it is only necessary to refer to the large literature of recent years bearing on the pathogenesis of angina pectoris and the growing number of reports on the so-called *"intermittierendes hinken"* or intermittent limping.

The association of certain intermittent abdominal conditions with arteriosclerosis of the vessels of the abdominal viscera was first pointed out by Henri Huchard and the French school, but has recently been the subject of comment by German writers also. Perutz[1] gives an excellent summary of the subject in a recent article. His paper shows that a variety of clinical pictures may be associated with abdominal arteriosclerosis, and also indicates that in some cases of thoracic arteriosclerosis the symptoms are referred to the abdomen, making errors in diagnosis likely. It has been recognized by cardiologists for years that in attacks of true angina pectoris the pain may be referred to the epigastrium. Perutz emphasizes this fact by the histories of certain patients of his own and by others culled from the literature. It would seem very necessary to differentiate sharply such cases of angina pectoris from real angina abdominis in which the seat of the trouble is in the abdominal cavity. This differentiation will usually be easy if the physician does not content himself with an abdominal examination only in such patients. Generally cardiac and arterial changes will be found and the patient will give a history pointing to intrathoracic disease, such as radiation of the pain down the left arm or the presence of dyspnea or cardiac uneasiness on slight exertion.

The diagnosis of the conditions due to abdominal arteriosclerosis is by no means simple. The results of treatment may be the only index to the true condition in a good many instances. Many of the patients give a history of general nervousness and gastric catarrh. In others the occurrence of pain after eating only, with vomiting, distension, and even gastric hemorrhage, leads to the diagnosis of ulcer or carcinoma of the stomach. Hematemesis in abdominal arteriosclerosis is not very uncommon. Meteorism and constipation are often present. When such symptoms occur intermittently in an individual with well-marked arteriosclerosis, and are relieved by medicaments directed against the arterial condition, such as iodids and nitrites, we are justified in suspecting that abdominal arteriosclerosis is at the root of the matter. It is well to remember, too, that there is evidence that, just as in angina pectoris, a toxic form of the condition associated with excessive use of tobacco and other poisons may occur. Some, in fact, believe ordinary lead colic to be of this nature. The essential lesion seems to be a spasm of the vessels, and here, as in angina pectoris, it is a question whether the pain originates in the walls of the spastic vessels or is due to the indirect influence of the circulatory disturbance on the nervous system.

1. Münch. med. Wochschr., May 28 and June 4, 1907.

THE PLAGUE OF RATS.

The Darwinist tells us that if it were not for the law of the survival of the fittest, and for the equally cruel law of Nature which impels sentient creatures to prey one on another, any single given species would within a few years overrun the earth. This dictum seems well borne out in an official bulletin recently issued,[1] in which we are warned against the rat. This prolific pest breeds three or four times a year; the females breeding when about four or five months old. The average litter is ten, but it often numbers fourteen or more. As a conservative estimate, a single pair, breeding without check or life losses, three litters of ten each in the year, would in three years have a progeny numbering upward of twenty million. The eleventh generation would begin the fourth year numbering over one hundred millions.

The roof, or Egyptian rat (*Mus alexandrinus*) infests ships especially, and is more common along our coast, especially in the south. The brown rat (*Mus norvegicus*) is the inland pest, and it destroys more of our property than all other noxious animals combined. "If for each cow, horse, sheep and hog on the farms of the United States the farmers support one rat on grain the toll levied on the cereals by these rodents would reach the enormous total of $100,000,000 a year."

But to the physician the matter is especially important in that rodents—both rats and mice—are perhaps more frequently than we imagine disseminators of disease. It seems they have been almost entirely responsible for the propagation of bubonic plague from port to port. They have brought forth from their sunless and foul hiding places the germs of typhus and typhoid fevers, and no doubt also of tuberculosis. It would seem that they may in very loathsome ways stand in a caus-

1. Farmer's Bulletin 297, U. S. Department of Agriculture, Washington, D. C.

ative relation to cases of trichinosis in human subjects. It is declared that in the Chicago stockyards hogs have been seen to catch and eat rats, and that on the other hand rats are known to devour the tainted, diseased flesh of the hog. Remlinger, of the Pasteur Institute in Constantinople, has found rodents to be very susceptible to hydrophobic infection; they may, therefore, be responsible for canine rabies.

The methods for the destruction of the rat given in the bulletin here noticed are those which careful experiments have shown to be the best, yet they are not infallible. Such a method "would be worth more to the people of the United States in a single decade than the Department of Agriculture has cost since its establishment."

The more important measures suggested for destroying them are poison, traps, ferrets and fumigation. Barium carbonate and strychnin are the most useful poisons. Traps are a most effective method of destroying rats if persistently used. The so-called guillotine or "break-back" type of trap, made entirely of metal, is probably the best. Ferrets and dogs are useful, but only when employed by persons experienced in handling them. In fumigation a wad of cotton saturated with carbon disulphid is pushed into the burrow and the opening closed with soil to prevent the escape of gas. This method is not available in dwellings.

We would observe, however, that the rat after all serves a purpose, as does pretty much everything else in Nature. If communities will permit the accumulation of filth and putrescence they must perforce endure this creature, which is a natural scavenger of such matter. Rats, unless they would starve, must necessarily desert habitations which are properly constructed, well drained and clean from the foundations up. In cities the careful screening of the entrance to sewers and the stopping of all holes in the floors and walls of houses should form a part of the sanitary crusade and would go far to making it impossible for the pest of rats and mice to continue. The most effective means of exterminating them lies in strict obedience to those laws of sanitation and prophylaxis which modern science has succinctly formulated.

MEDICAL ADMINISTRATION AND MEDICAL RESEARCH.

A severe indictment of the methods of British medical administration in India—and incidentally elsewhere—is made by Dr. Ronald Ross in a signed communication in *Nature* June 13. Notwithstanding the numerous opportunities tempting a progressive physician to research in almost unknown fields, investigation formerly was not merely not encouraged by the higher medical authorities, but it was positively discouraged. During about twelve of his eighteen years in the Indian Medical Service he says he was one of many junior medical officers who had practically little to do, his official duties occupying him hardly more than two hours a day. Yet, when in 1884 he asked his chief if he would like to have him investigate the indigenous fevers during his abundant leisure, he was told that his duty was not to investigate but to cure, as if the second were possible without the first. There was no encouragement for efficiency, examinations for promotion were unknown, leave and opportunity for study could scarcely be obtained and apparatus was generally unsupplied. When at last he had, under all these disadvantages, succeeded in working out the life history of the malarial parasite in the mosquito he could obtain no satisfactory assurance that he would be allowed to follow up his work and not be deprived of the necessary facilities; he, therefore, left the country to continue his investigations elsewhere. No steps were taken for years by the authorities to follow his recommendations to control malaria by proper drainage, etc., and no official recognition was given of his services. He does not know, he says, of a single instance in British administration where promotion or good service pension has been given as a reward for medical research. On the other hand, men have actually suffered because of their investigations, like King, who many years ago produced a good bovine vaccine from the calf and lost his position on account of it, and, more recently, Haffkine, who, notwithstanding his universally recognized great services, is now out of government employ because of an utterly unfounded charge that tetanus was produced by his plague vaccine.

Recently, however, probably since Ross wrote this article, Mr. Morley stated in Parliament that the government desires to retain Mr. Haffkine's services, and such a statement practically constitutes an apology. At present Ross admits that matters are somewhat improved, some of the medical budget of the Indian Medical Service is being devoted to encouraging research on diseases like kala azar, Malta fever and plague, officers of the service are allowed study leave, and outside of India creditable work has been done on Malta fever and sleeping sickness. But, in his opinion, there is still too little official encouragement of scientific work by medical men in the British government employ. There is abundant opportunity, he thinks, for the employment of at least 5 per cent. of all the expenditure by the government for medical and sanitary purposes in research work. Britain's position in the scientific world, he says, is not due to government encouragement, but to private individual effort. This is true not only in medical matters but in all other departments as well, and whether or not a nation so wedded to conservatism will be able to change its ways in time for its own salvation, should the struggle for national supremacy or even existence become urgent, is a question he says he can not touch on in his communication.

Ross paints a black picture of certain conditions of British medical administration in the comparatively recent past, and one that is only partially relieved by more hopeful indications in the present. While we can

not charge our own national government with discouraging scientific medical or other research, it nevertheless has its own faults and it is no part of patriotism to ignore them. In India they at least recognized one need that we fail to appreciate, to our cost in times of stress, that is the need of maintaining a medical corps that will be sufficient in case of emergency.

THE MODE OF ACTION OF THE FINSEN LIGHT.

When in 1896 Finsen introduced the use of concentrated light rays into therapeutics he did it chiefly with the idea that the light rays acted by destroying the bacteria in the tissues without considerably injuring the tissues themselves. It was well known that bacteria are readily destroyed by light, and, therefore, it was naturally assumed that the healing of lupus and similar conditions depends on a powerfully bactericidal effect of the concentrated light rays. When, stimulated by Finsen's researches, the exact method of the action of light on bacteria was more carefully investigated there were found reasons to question the correctness of this assumption. In particular it was shown by Bang that whereas the chief bactericidal power of light depends on certain of the ultra-violet rays, it is these very rays that have the least power of penetrating the tissue; even a thin layer of hornified epidermis is sufficient to shut them entirely out. Agreeing with this fact, it has been repeatedly demonstrated that exposure of tuberculous tissues to the Finsen lamp does not destroy the bacilli in them.

The entire mechanism of the action of Finsen light has been elaborately reviewed and investigated by Jansen[1] in the Finsen Institute at Copenhagen, and he finds the capacity of the therapeutic lamp to disinfect tuberculous tissues to be extremely small; a one-hour exposure destroys bacteria only to a depth of, at the most, 0.2 millimeter from the surface. Furthermore, contrary to the hope once held forth that the light rays affect bacteria more than tissues, it was found that the same degree of exposure kills epithelial cells to a depth of 0.5 millimeter and causes a severe serohemorrhagic exudation and thrombosis. Connective tissue cells are much less affected by the light than are the epithelial cells, and the collagenous interstitial substance is highly resistant; consequently the exposure to light is followed by a marked fibrous hyperplasia. This fibrous tissue growth is in no way a specific result of the action of the light rays, but is a simple inflammatory reaction.

Jansen concludes that the Finsen light acts merely as a form of caustic which is peculiarly effective because it acts most on the pathologic cells and spares the connective tissues to an unusual degree, thus favoring regenerative activity. Only the ultra-violet rays have any considerable effect on the tissues, the blue rays being but feebly active, while red, yellow and green rays produce no demonstrable histologic changes.

1. Ziegler's Beiträge, 1907, xli, p. 277.

THE ST. LOUIS LUNACY COMMISSION.

In view of the recent exacerbation of public distrust of medical expert testimony since the Thaw trial in New York the proposition to give legal recognition to the St. Louis Commission on Insanity of the city jail is of interest. The plan adopted has been to give to the prosecuting attorney, in the case of every prisoner concerning whose sanity there was question, the opinion of a committee of prominent physicians, two of them professors of mental diseases in medical schools. The opinions of this—in a sense—self-constituted and voluntary commission have been accepted and acted on by the prosecuting attorney and the judges of the criminal courts. In case the prisoner is declared insane by the commission the prosecuting attorney can ask that he be placed in an asylum instead of coming to trial. Heretofore the practice has been to let the defense of insanity be raised at the trial and be vigorously combated by the prosecution. The chances of injustice to a really insane person accused of crime and the needless expense to the public of such a course need no demonstration. Thus far no attempt has been made to question the right of the commission to declare an accused person insane, but the possibility of the question being raised at any time has led to the steps to give it a recognized legal status. The commission has acted in about fifty cases, furnishing disinterested testimony that is declared invaluable by the prosecuting attorney. There is no apparent reason why a similar arrangement would not be equally practicable in any of our large cities and equally advantageous. It may not be possible to abolish the defense of insanity altogether, as the St. Louis circuit attorney suggests, but it certainly would be less frequent if the mental condition of the accused could always be passed on before trial by a commission of disinterested experts, and the avoidance of even a percentage of the useless and expensive trials of insane persons that now occur would be a blessing. Of course the judgment of such a commission would not necessarily mean conviction or acquittal; in many doubtful cases the commission might with propriety suggest a temporary commitment to an asylum for observation, and there ought to be legal provision for such commitment. The plan seems to be as good a one as any that have been suggested for the relief of the present unsatisfactory situation as regards medical expert testimony in criminal trials, and the fact that it has worked so well in St. Louis should be taken as a recommendation of its trial elsewhere.

HYGIENE VS. FEEDING IN INFANCY.

From investigations recently made in Great Britain[1] and further borne out by similar studies in this country, there seems to be no doubt that correct feeding of infants is a more potent factor in the development of healthy children than hygienic surroundings. It was found on examining a large number of Jewish and gentile children in the slum districts of London and Leeds that the preponderance of health and general physique is largely with the Hebrews. This is the more strange,

1. The Journal A. M. A., June 22, 1907, 2127.

as it was found that the poorer class of Jews live under the most unhygienic and unspeakably squalid surroundings and are much more poorly housed and overcrowded than a similar class of gentiles. The explanation advanced is that the Jewish mothers invariably nurse their infants and the older children have a food richer in fats and oils than do the gentile children. Another point of interest is the fact that the Jewish mother practically never works in factories, sweatshops, etc. The manager of a large factory, in which are employed a number of women and girls, stated that when a Jewess leaves the factory to get married that is the last he sees of her. With gentiles of the same class it is a common thing for them to reapply for positions after a few weeks or months of married life. The reason ascribed in this case was that there is among the Hebrews a feeling that it is a disgrace for the wife and mother to have to do aught than keep up the home. These facts appear to be another verification of the oft-expressed belief that mother-care and what goes with it will cover a multitude of hygienic sins.

PANICKY SANITATION AGAIN.

Announcement was made in the newspapers recently that the public health officials of Texas were about to proclaim a permanent quarantine against all cases of advanced tuberculosis, placing the disease in the same class with smallpox and yellow fever as a peril to the public health. If the report is true it is to be hoped that the health authorities have by this time reconsidered their determination. The conquest of tuberculosis is not to be achieved by such measures as quarantine, but by building up the resistance and improving the environment. The danger of the infection from even the most advanced cases is not comparable to that of other legitimately quarantinable diseases; it is avoidable by the use of very simple and practicable precautions. Even advanced cases—a rather indefinite class—are sometimes curable, and if the climatic conditions in Texas are such as to afford some of the sufferers their best chance for recovery or relief the proposition to exclude them from such benefits is liable to be criticised as hardly creditable, under the circumstances, to the head and heart of the one originating it. It is useless to attempt to exclude a ubiquitous infection by any such methods, and it is worse than futile to attempt to excuse them on the ground of philanthropy or a desire to protect the citizens of the state. As might have been expected, the proposition is reported to have aroused a storm of protests from Texans who see in it a threat against the honor and prosperity of the state, and it is to be hoped that their wishes will prevail.

ACCIDENT POLICIES AND PROFESSIONAL RISKS.

A decision of the United States Court of Appeals at St. Louis may be of interest to physicians. A dentist while operating on a patient received some particles of septic matter in his eye that were coughed or spat out by the patient, and it was alleged blood poisoning occurred, disabling him for many weeks. He recovered judgment against the Fidelity and Casuality Company of New York in the Federal Court at Denver for $1,000, which judgment was reversed by the Appellate Court. This court held that a wound, within the meaning of an accident policy covering blood poisoning, must be an abrasion of the skin or membrane by which the germs are introduced into the blood. This may be a good legal technicality, but it will hardly receive medical approval. The ability of mucous membranes to absorb germs should be taken into account in any accident policy of this sort. The use of such a technicality on the part of an insurance company to evade its obligations is, we may reasonably assume, a violation of the implied understanding with which every physician takes out such a policy. All physicians are liable to serious risks, often unavoidable, and the question of determining the existence of an abrasion is sometimes a difficult one. It may exist without its subject either being aware of it or of being able to prove its existence afterward and the fact of blood poisoning through the skin is itself presumptive evidence of such lesion. On especially vulnerable parts like the eye the fact that an actual abrasion is not necessary for the production of serious results from the contact with toxins or germs should be recognized in every policy issued by an accident insurance company. It will be well for physicians to see that their accident policies cover all reasonable professional risks and take them out in companies that specifically recognize such liabilities.

Medical News

CALIFORNIA.

Society Meeting.—At the annual meeting of the Yuba-Sutter County Medical Society, held in Yuba City, June 17, the following officers were elected: President, Dr. James H. Barr, and secretary-treasurer, Dr. George W. Stratton, both of Marysville.

Personal.—Dr. Allen F. Gillihan, Berkeley, has been appointed medical examiner at the university during the absence of Dr. George F. Reinhardt in Europe.——Dr. Thomas C. Stockton, San Diego, who was injured by inhaling smoke at a brush fire June 24, is reported to be much improved.

Hospital Notes.—The McCloud Hospital, recently built, is now fully equipped and occupied. The staff consists of Drs. Robert T. Legge and Harrington B. Graham.——Drs. Norman D. Morrison, H. D. Bowers, Wood C. Baker and A. L. Oldfield are interested in building a fireproof steel and stone hospital at San Mateo.

Vital Statistics for May.—During May 1,992 births, 1,796 marriages and 2,540 deaths were reported in the state. Of these deaths 378, or 14.9 per cent., were due to tuberculosis; 340, or 13.4 per cent., to diseases of the circulatory system; 296, or 11.7 per cent., to diseases of the respiratory system; 204 to diseases of the nervous system, and 62 to meningitis. Of the epidemic diseases measles caused 28 deaths; typhoid fever, 27; diphtheria, 19; scarlet fever, 16; whooping-cough, 15, and malarial fever, 7.

COLORADO.

May Deaths.—During May 911 deaths were reported, equivalent to an annual death rate per 1,000 of 17.42. Of the deaths 27 were due to scarlet fever, 7 to typhoid fever, and 4 to diphtheria.

Contagious Diseases.—During May 430 cases of scarlet fever were reported, 241 of which were in Denver County; 158 cases of smallpox; 35 cases of diphtheria, and 27 of typhoid fever. As compared with the previous month, May shows a decrease of 3 cases of diphtheria and 5 cases of smallpox, and an increase of 162 cases of scarlet fever and 11 cases of typhoid fever.

Corner-stones Laid.—The corner-stones of the five new buildings being erected by the Jewish Consumptives' Relief Society at Edgewater were laid June 27 with appropriate ceremonies. The buildings comprise a pavilion for bedridden patients, medical building, boiler house and brick stables.

ILLINOIS.

Donation to Charity.—By the will of the late John C. Proctor, Peoria, $300,000 is given to the Cottage Hospital in that city.

Personal.—Dr. William B. Kunze has been appointed health commissioner of Belleville.——Dr. Alexander Gray has been elected health officer of Savanna.——Dr. Don A. Vanderhoof and family, Byron, will sail for Vienna August 3, for a year of postgraduate work.

Communicable Diseases.—Malignant diphtheria has appeared in Arenzville. There has been one death in one family and four children are seriously ill.——Three homes in Belvidere are quarantined on account of smallpox.——Several cases of smallpox have been reported to the state board from Tolono, Champaign County.——Aurora reports 35 cases of smallpox in 13 families.

Chicago.

Sanitarium Opened.—La Rabida, the Jackson Park sanitarium, had its formal opening June 29, for members of the board and guests. On July 1 the institution was opened to the public.

New Hospital Addition.—Several buildings on Hermitage Avenue are being razed to make preparations for the erection of the $300,000 addition to the Presbyterian Hospital. The plans provide for 75 rooms, besides quarters for nurses and employés.

Lectures to Women.—Lectures to women and girls are being delivered each Saturday afternoon in July at the Public Library and at the Academy of Science, in Lincoln Park, under the management of the Chicago Women's Club and the Chicago Society of Social Hygiene.

Another Sundown College.—Another night medical school has begun work in Chicago under the name of the Reliance Medical College. This makes four schools of this kind in the city. Its announcement states that 34 physicians have been enrolled on the faculty and that a class of 60 has already registered.

The City Clean.—The distribution of 100,000 signs, to be posted all over the city, was commenced recently by the commissioner of public works. The signs read as follows: "Post No Bills. Don't Sweep Dirt into Street. Don't Spit on the Sidewalk. Don't Litter the Streets. Police Will Enforce the Above. Fred A. Busse, Mayor."

Fourth of July Accidents.—The ambulances of the health department made 216 runs on the Fourth of July, or 40 fewer than those made for the previous week. They removed 120 sick or injured persons to the hospital, 15 to their homes. The ambulance surgeons treated 63 sick or injured persons at police stations, 9 at places of accident and gave one treatment for heat stroke.

Deaths of the Week.—The total number of deaths from all causes during the week ended July 6 was 456, or 23 fewer than for the preceding week and 15 fewer than for the corresponding week of last year. The death rate was equivalent to 11.28 per 1,000 annually. Pneumonia caused 54 deaths; consumption, 53; heart disease, 42; violence (including suicide), 34; acute intestinal diseases 27; cancer, 21, and nervous diseases, 17.

Medical Society Meeting.—At the annual meeting of the Chicago Medical Society, held June 19, the reports of the work done by the branch and affiliated societies were read. In the report of Dr. Frederick R. Green, chairman of the organization committee, he stated that there had been added to the society 228 members during the year, increasing the membership to 2,058 at the present time, and that one new district had been formed in the extreme south end of the county. Much work was done by the committee under the direction of the council and the committee on public relations at the last session of the state legislature. The contract practice committee reported that in its opinion the only solution of the entire question must come through complete organization of the medical profession and that the more completely the profession is organized the more satisfactory will be the final adjudication. The committee on the abuse of medical charities made a recommendation that a committee be appointed whose duty it shall be to bring into one federation all reputable dispensaries for the purpose of overcoming the evils that now exist; that all dispensaries be required to keep complete and open records of all cases treated; that all dispensaries have conspicuous signs, stating that the dispensary is for the deserving poor only, and that none but the deserving poor shall receive treatment or be received at any dispensary and that whenever patients are treated gratuitously at free dispensaries they shall be used for teaching purposes. The committee on criminal abortion reported that it had succeeded by means of harmonious cooperation with the coroner and state's attorney in suppressing all objectionable advertisements in the daily press of Chicago. The report of the secretary showed that the society at present has 66 life members, 29 members emeritus, 5 honorary members and 1,877 resident members and 130 nonresident members, making a total of 2,107. During the year 228 new members have been elected, and 38 have been lost by transfer, resignation, removal or death. The president, Dr. George W. Webster, in his annual address, gave a brief report of the work of the committees for the year. The treasurer reported receipts of $11,231.76; disbursements of $7,599.46, and cash on hand, $3,632.30. The following officers were elected: President, Henry B. Favill; secretary, Dr. Robert T. Gillmore; councilors, Drs. Adolph Gehrmann, William L. Noble, George Bell, Frank X. Walls and William L. Baum; alternates, Drs. Heman Spalding, Charles E. Paddock, A. Belcham Keyes, William S. Pickard and Ernest C. Riebel.

INDIANA.

Tuberculosis Farm Site Wanted.—At a meeting of the Indiana Tuberculosis Hospital Commission, June 13, it was decided to divide the state into sections for a preliminary inspection of sites for the proposed hospital. The site should be on good land, part timbered, 600 feet above sea level, with sheltered portions, good water and railroad facilities, and should contain at least 500 acres.

Tuberculosis Dispensary.—The tuberculosis clinic at the City Dispensary, Indianapolis, under the charge of Dr. George Wysong, opened for the reception of patients July 10. The patient will be furnished with instructions as to his care of himself and the avoidance of the spread of the disease, and a nurse will visit the home of the patient and instruct the members of the family as to the care required.

Personal.—Dr. John L. Freeland, Indianapolis, has been appointed superintendent of the City Hospital, vice Dr. Norman E. Jobes, and will assume his duties July 15.——Dr. Edwin Walker, recently elected first vice-president of the American Medical Association, was given a banquet by the local medical profession of Evansville July 7. Dr. Ludson Worsham presided as toastmaster, and Dr. Walker responded to the toast to the American Medical Association.——In the case of Dr. Paul F. Martin against the city of Indianapolis, in which $1,077 was asked for services at the pesthouse, judgment was given in favor of Dr. Martin, June 29.——Dr. George Revis has been appointed physician to the Lafayette Detention Hospital, vice Dr. William P. Yonkey, deceased.

IOWA.

Personal.—Dr. Park A. Findley, formerly of Des Moines, has been appointed assistant chief surgeon of the Mexican Central Railway and placed in charge of the Railway Hospital at Monterey.——Dr. Wilbert E. Harriman, physician of the Iowa State Agricultural College, Ames, since 1895, has resigned.

Faculty Changes.—The board of trustees of the Sioux City College of Medicine announces the following changes in its faculty: C. T. Stevens, professor of biology; W. W. Scott, professor of chemistry; Dr. Delmer S. Davis, assistant professor of chemistry; Dr. George S. Browning, professor of infectious diseases, and the Hon. W. L. Harding, professor of medical jurisprudence.

Society Meetings.—At the June meeting of the Dubuque County Medical Society, held June 18 and 19, Dr. Charles L. Scudder, Boston, read a paper illustrated by lantern slide demonstration on "Stenosis of the Pylorus in Infants;" Dr. George K. Swinburne, New York City, contributed a paper on "Kidney and Ureteral Stone;" Dr. Robert W. Lovett, Boston, delivered a paper on "Infantile Paralysis and Its Treatment," and Dr. Albert I. Bouffleur, Chicago, contributed a paper on "Compression of the Chest with So-called Traumatic Asphyxia."——At the annual meeting of the Alumni Association of Drake University, College of Medicine, Des Moines, Dr. Charles N. O. Leir, Des Moines, was elected president; Dr. Calvin W. Bufkin, Runnells, vice-president, and Dr. Robert L. Parker, Des Moines, secretary-treasurer.——At a meeting of the Central District

Medical Association, held in Boone, June 18, the following officers were elected: President, Dr. George H. Stanger; vice-president, Dr. Maurice A. Healy, and secretary-treasurer, Dr. James C. Walker, all of Boone.——The thirty-sixth annual meeting of the Des Moines Valley Medical Association was held in Ottumwa June 20. The following officers were elected; President, Dr. William L. Downing, Moulton; vice-presidents, Drs. Lewis A. Rodgers, Oskaloosa, and Jerry A. Replogle, Udell; secretary-treasurer, Dr. Fred W. Bowles, Ottumwa (re-elected); assistant secretary, Dr. Henry C. Young, Bloomfield, and censors, Drs. Marcus M. Pascoe, Ottumwa; Emmet T. Wickham, Washington, and James S. Gaumer, Fairfield.

KANSAS.

License Revoked.—The Kansas Medical Board is reported to have revoked the license of Dr. W. S. Ferguson, Kansas City, July 4.

Personal.—In a fire at Wetmore the office of Dr. Benjamin Skinner was destroyed.——Dr. E. B. Kneer has been appointed physician to the city and county of Atchison.——Dr. William H. Bogle, Atchison, is reported to be seriously ill with uremia.

State Board of Health Election.—At the annual meeting of the State Board of Health, held at Topeka, July 2, the following officers were elected: President, Dr. Jonathan B. Carlisle, Leon; vice-president, Dr. Alexander B. Scott, Jetmore, and bacteriologist, Dr. Sara E. Greenfield, Topeka.

Dispensary Moved.—The Kansas Medical College free dispensary has been moved from 204 Monroe Street to 209 Kansas Avenue, Topeka. Lecture rooms are to be fitted up at the dispensary and the last two years of the medical course will be carried on there.——The building and grounds of the Washburn Medical College, Twelfth and Argyle Streets, Topeka, have been sold for $8,000.

KENTUCKY.

Personal.—Dr. John C. Bogle has been elected health officer of Danville.——Dr. Louis H. Mulligan, Lexington, has been made superintendent of the Central Kentucky Hospital for the Insane, Lakeland; Dr. James W. Stephens, Lakeland, superintendent of the Western Kentucky Hospital for the Insane, Hopkinsville, and Alexander Bailey, Hopkinsville, superintendent of the Kentucky Institute for the Feeble-Minded, Frankfort.——Dr. W. Hamilton Long, Louisville, who has been ill at the Norton Infirmary for several weeks, is reported to be convalescent.——Dr. James T. Reddick, Paducah, has been elected a member of the hospital board, vice Dr. John G. Brooks.

Society Meetings.—At the annual meeting of the State Association of Railway Surgeons, held in Frankfort, Dr. E. E. Hume, Frankfort, was elected president; Dr. Charles Kearns, Covington, vice-president, and Dr. James B. Kinnaird, Louisville, secretary (re-elected). The next meeting of the society will be held in Louisville in May.——The Southwestern Kentucky Medical Society, at its recent meeting in Paducah, elected Dr. Van A. Stilley, Benton, president; Drs. Frank V. Kimbrough, Maxon Mills, and John S. Davis, Lovelaceville, vice-presidents; Dr. Charles E. Purcell, Paducah, secretary; Dr. Charles H. Brothers, Paducah, treasurer, and Dr. Robert T. Hocker, Arlington, historian.——At the annual meeting of the Owensboro Medical Society, held June 24, Dr. Charles H. Todd was elected president; Dr. Otway W. Rash, vice-president, and Dr. William S. Little, secretary-treasurer.——At the annual meeting of the Louisville Medico-Chirurgical Society Dr. William Bailey was the guest of honor, and was presented with a loving cup on the occasion of his completing a half-century of practice in Louisville. The following officers were elected: President, Dr. Sidney J. Meyers; vice-president, Dr. Lewis S. McMurtry, and secretary-treasurer, Dr. Frank C. Simpson.

MARYLAND.

Fire in Sanitarium.—A fire in the Ladies' Sanitarium, Waverly, June 19, caused damage in the upper part of the building, with a loss of $250.

Society Meetings.—At the annual meeting of the Anne Arundel County Medical Society, Dr. Thomas H. Brayshow, Glenburnie, entertained the society at his home. The meeting was held in the open air and was addressed by the president of the Medical and Chirurgical Faculty of Maryland and others.——At the meeting of the Baltimore County Medical Society, held at Towson, Dr. Charles O'Donovan delivered the address on "Professional Organization," and the fact was commented on that only about one-third of the physicians of the county were members of the society.

Baltimore.

Hitchcock Bequest.—The faculty of physic of the University of Maryland has devoted the Hitchcock bequest, amounting to about $4,500 invested in 5 per cent. securities, to the maintenance of two scholarships.

Hospital Report.—The sixty-fourth annual report of Mount Hope Retreat shows that 377 new cases were admitted during the year, making a total of 1,072. There were 298 patients discharged; 74 died, leaving 644 at the close of the year. The use of opiates and drugs has been discontinued at the institution, and diversions have been introduced for both sexes.

Personal.—The University of the South, Sewanee, Tenn., has conferred the honorary degree of D.C.L. on President Ira Remsen of Johns Hopkins University.——Dr. John A. Sperry has been made chief resident physician to the Church Home and Infirmary, vice Dr. George MacGregor, who has gone to the West.——Dr. Charles Steubenrouch has been made a member of the staff of the institution, vice Dr. Elliott H. Hutchins, resigned.——Dr. Harry Friedenwald has been re-elected president of the Federation of American Zionists.——Dr. William E. Tyson commenced on his new duties as resident physician at the Kensington Hospital, Philadelphia, July 1.——Dr. G. A. Christian Deetjen sailed for Bremen, July 1.——Prof. William H. Welch of Johns Hopkins University has been suggested as a candidate for the United States Senate, on the initiative of Dr. Charles M. Ellis, Elkton.——Dr. Thomas H. Buckler sailed for Europe, July 5.——Dr. Robert W. Johnson and Reverdy M. Hall sailed for Bremen, July 4.

MINNESOTA.

Personal.—Dr. and Mrs. James H. Beaty, St. Cloud, sailed last week for Europe.——Dr. Roy H. Labbitt, St. Paul, is to be interne at the City Hospital.——At the annual meeting of the Women's Medical Club of Minneapolis, June 20, Dr. Florence C. Baier was elected president; Dr. Esther H. Young, vice-president; Dr. Ethel E. Hurd, secretary, and Dr. Maud Slocumb, treasurer.

Pasteur Institute to be Established.—A Pasteur institute under the supervision of and supported by stated funds granted to the State Board of Health will be established in the Institute of Public Health and on the University Campus, Minneapolis, about August 1. Citizens of the state of Minnesota will be treated gratuitously. There will be no provision for beds, therefore people who are badly bitten or bedridden will have to be treated at the hospitals. The work will be under the general charge of the director of the Minnesota State Board of Health, Dr. F. F. Wesbrook, and under the immediate supervision of Dr. Orianna McDaniel.

MISSOURI.

Consolidation of Journals.—The publishers of the *Interstate Medical Journal* announce that they have purchased the *St. Louis Courier of Medicine*, one of the oldest western medical journals, and consolidated it with the *Interstate Medical Journal*, beginning with the July issue.

Personal.—Dr. John E. Bruere, St. Charles, was tendered a banquet by the physicians of the city, June 21. Dr. Bruere has retired from practice and will reside in New York City.——Dr. and Mrs. Herman Prinz, St. Louis, sailed for Europe, June 26.——Dr. C. R. Lytle, interne at the Ensworth Hospital, St. Joseph, has resigned and will move to Chicago.

University to Absorb College.—It is reported that the Barnes Medical College, including its departments of dentistry pharmacology and the Centenary Hospital, are to be consolidated with the state university, the transfer to become effective in September, 1908. This, it is supposed, will mean that the Missouri University, Medical Department, will give its last two years' course in St. Louis.

Asylum Changes.—Dr. Benjamin H. Smith has resigned as assistant physician of State Hospital No. 2, St. Joseph.——Dr. Frank S. Vernon has been re-elected superintendent of State Hospital No. 4, Farmington, and Dr. Frank L. Long, assistant physician.——Dr. De Vilbiss has succeeded Dr. V. A. Williams as assistant physician at State Hospital No. 3, Nevada.——Dr. William F. Kuhn, Farmington, on July 1 assumed charge of State Hospital No. 2, St. Joseph, succeeding Dr. Charles R. Woodson, resigned.——Dr. G. Wilse Robinson, Kansas City, has been elected superintendent of State Hospital No. 3, Nevada.——Dr. Walter E. McKinley, Denver, has been appointed assistant physician at State Hospital No. 2, St. Joseph.

NEW YORK.

Buffalo Personal.—Drs. Benjamin H. Grove and Matthew D. Mann wil spend the summer in Europe.——Dr. Jacob S. Otto is spending the summer on the Massachusetts coast.

Personal.—Dr. Joseph C. Palmer, chief of the medical inspectors of public schools of Syracuse, is acting as health officer in the absence of the health officer and his deputy.——Dr. Medina Preston has been appointed heath officer of Waterville.——Dr. Charles E. Darrow, Rochester, sailed for the Mediterranean, June 29.

State Board Election.—The State Board of Medical Examiners met June 25 and effected temporary organization. The following officers were elected: President, Dr. William Warren Potter, Buffalo; vice-president, Dr. William S. Searle, Brooklyn; question committee, Drs. Lee H. Smith, Buffalo; William W. Potter, Buffalo; Frank W. Adriance, Elmira, and R. H. Williams, Rochester. The topics of obstetrics and gynecology were temporarily assigned to Dr. W. W. Potter, Buffalo, pathology was given to Dr. Lee H. Smith, Buffalo; diagnosis to Dr. William S. Searle, Brooklyn; bacteriology to Dr. Frank W. Adriance, Elmira; anatomy to Dr. William S. Ely, Rochester; hygiene and sanitation to Dr. Eugene Beach, Gloversville; physiology to R. H. Williams, Rochester; chemistry to Dr. Floyd S. Farnsworth, Plattsburg, and surgery to Dr. Floyd M. Crandall, New York City.——The regents have appointed Dr. Maurice J. Lewi, the present secretary of the joint board, as secretary of the new medical board.

New York City.

Tuberculosis.—The department of health is gradually but surely reducing the number of deaths from tuberculosis. The death rate in New York has been decreased from 4.27 to the 1,000 of population in 1881 to 2.16 in 1906, or about 50 per cent.

Floating Hospital.—The Floating Hospital of St. John's Guild starts the season with trips to New Dorp, S. I., and return, with the same schedule of landings as last year. Tickets have been issued to the board of health, hospitals, churches and physicians.

Personal.—Dr. and Mrs. Frank E. West of Brooklyn sailed for Europe, July 2; Dr. and Mrs. Virgil P. Gibney and Dr. and Mrs. Valentine Mott, July 4, and Dr. J. E. Stillwell, July 6.——Dr A. L. Wolbarst has been elected professor of genito-urinary diseases at the New York School of Clinical Medicine and attending genitourinary surgeon at the West Side German Dispensary.

Adulterated Soda Water.—The board of health intends to punish severely those who adulterate soda water. In Manhattan alone there are 3,000 druggists who dispense soda water, and a conservative estimate shows that over 60,000,000 gallons of soft drinks are consumed yearly, one-half of which is soda water. The board of health intends to keep a sharp lookout this summer for offenders against its regulations as to the purity of food and drinks.

Hospital for Sailors.—A movement is on foot for the establishment of a hospital for the treatment of sailors with infectious diseases, for which there is no adequate provision at present. More than a million sailors come to this port annually and fully 10 per cent. of them are afflicted with infectious diseases. It is hoped that $250,000 will be raised for the erection of such an institution, and that a similar amount will be raised for the endowment of the hospital.

Institution for Tuberculosis Patients.—The health department proposes to have a large institution built for consumptives on Randall's Island. This will be for the purpose of segregating these patients and, at the same time, permitting them to keep employed and provide for those dependent on them. Dr. Darlington, president of the health department, believes that these people should sleep under the best hygienic surroundings and receive food properly prepared. Those who are able to work may go to and from the city, but will spend the remainder of the time in these dormitories.

Home for Convalescents.—John M. Burke is still hale and hearty at the age of 95, and hopes to pass the century mark. He has given $5,000,000 for the establishment and maintenance of a convalescents' home. Mr. Burke is the president of the fund, which is known as the Winifred Masterson Burke Relief Foundation, named in memory of his mother, who died 40 years ago. The deed of the trust provides for the erection, after his death, of a home for the care and treatment of convalescents. It further provides that all persons needing rest as a means of cure shall be eligible for admission to the home.

Coroner's Record for June.—There were reported to the coroner's office in June 498 deaths, of which 236 were due to violence or accident, and 262 were due to natural causes. Of the deaths by accident or violence 52 were homicides, 26 were suicides, 39 bodies were found floating in the river; 80 persons were killed by fractures received from falls, 7 by collapse of buildings, 14 of gas poisoning, 7 of drug poisoning, 2 were shot, 4 were burned to death, and 2 resulted from caisson disease. Sixteen persons were killed by vehicles, 15 by street railways, 9 by assault, 3 by malpractice, 3 by automobiles and 3 by shooting. Of the suicides 7 were by drowning, 6 by shooting, 4 by jumping, 6 by gas, 4 by throat cutting and 2 by poison.

Contagious Diseases.—For the week ended June 22 there were reported to the sanitary bureau 661 cases of measles, with 33 deaths; 526 cases of scarlet fever, with 26 deaths; 396 cases of diphtheria, with 29 deaths; 380 cases of tuberculosis, with 155 deaths; 58 cases of typhoid fever, with 13 deaths; 23 cases of whooping-cough, with 3 deaths; 12 cases of cerebrospinal meningitis, with 11 deaths, and 62 cases of varicella, a total of 2,118 cases and 260 deaths.——For the week ended June 29 there were reported to the sanitary bureau 762 cases of measles, with 34 deaths; 401 cases of scarlet fever, with 29 deaths; 356 cases of diphtheria, with 41 deaths; 317 cases of tuberculosis, with 142 deaths; 54 cases of typhoid fever, with 6 deaths; 31 cases of whooping-cough, with 12 deaths; 9 cases of cerebrospinal meningitis, with 16 deaths, and 154 cases of varicella, a total of 2,084 cases and 281 deaths.

PENNSYLVANIA.

Fourth of July Death List in Pittsburg.—The coroner's office of Pittsburg shows that all records of fatalities following the celebration of Independence Day were broken this year. Fifteen violent deaths were reported, including two murders and one suicide.

Typhoid in Pittsburg.—The epidemic of typhoid fever which has been prevalent in Pittsburg shows no sign of abatement; indeed, it seems to be gradually increasing. The total number of new cases reported during June aggregated 498. The superintendent of the health bureau believes the epidemic to be due to the infected water supply.

Personal.—Dr. Fred C. Johnson, state medical inspector, was admitted to the Harrisburg Hospital July 5, to undergo an operation for appendicitis.——Dr. Mary M. Wolfe, resident physician of the women's department of the State Insane Hospital, Norristown, has been appointed to represent the United States at the International Congress on Psychiatry, Neurology, Psychology and the Nursing of Lunatics, at Amsterdam, Holland, September 2-7.

Health of the State Camps.—It is reported that Dr. Samuel G. Dixon, state commissioner of health, is making special arrangements to insure the health of the encampment of the Third Brigade at Mount Gretna. He plans to make the camp a model from a sanitary standpoint, and has submitted a detailed report to the military authorities, together with his recommendation for the sanitary control of the encampment. He pointed out that liability to pollution of surface waters of any military camp or in its vicinity is always great, but this is especially so at Mount Gretna, where many thousands of people congregate, for many purposes other than visiting the military reservation.

Labor's Death List.—The records of the coroner of Allegheny County show that almost 50 per cent. of the deaths in that county are violent and are the result, directly or indirectly, of the rush and grind of the industries in the district of Pittsburg. Deaths from natural causes, contagious diseases, suicides, murders and accidents met in the ordinary walks of life are not considered in this percentage; 2,660 deaths were reported to the coroner in the year 1906, of which 919 were the result of accidents in mills, mines or on railroads. Some of the victims were burned by molten metal, bursting of glass furnaces; others were caught in rollers and many crushed in the machinery of the rail mills. Many were also killed in mines by falling slate, some by gas explosions, others by falling derricks, scaffolds and similar structures. The average number of deaths reported by the coroner is about 250 a month. For the first five months of the present year there were 1,095 deaths, 344 of which may be classed as "sacrifices." For the same period in the preceding year there were 1,015 deaths, of which 350 may be placed in the same category. Comparing the loss of life by the accidents with the tonnage and production of the Pittsburg district, one life is paid for every 50,000 tons of coal shipped, and the annual shipment is about 50,000,000 tons. For every 3,800 cars that carry freight

out of or into Pittsburg a life is lost. This is exclusive of cars that are carrying freight through to other points. Every 7,600 tons of the 7,000,000 tons annual production of iron and steel costs a life, and of the 800,000 tons annual output of steel rails every 807 tons is responsible for a life.

White Haven Sanitarium Report.—The eleventh annual report of the White Haven Sanitarium shows that during the first six years of the society's existence it devoted itself to the care of consumptives in existing institutions, paying for the maintenance of dying patients in hospitals in which it could secure beds for them, and early stage cases at sanitariums which were willing to accept patients for the cost of maintenance. During the first six years the society paid out $30,702.88 for the care of patients of this character. The entire amount was raised by public charity. In 1901 the Society af the White Haven Sanitarium was established; the sanitarium had a capacity of 32 beds, and during the first year 69 patients were cared for in the sanitarium and 267 in other institutions. The amount of money expended by the society during this year was $21,045.91. In the following year three additional cottages were erected with 16 beds each, and during the year 561 patients were cared for. During the following years new buildings were constantly added to the small beginning and more patients were correspondingly cared for. In 1906 the society increased the capacity of the sanitarium to 169 beds, which is the present capacity of the institution, and the society has maintained 751 patients during the year at an outlay of $60,035.42. The amount of money expended during the year aggregated $71,896.67. Of the resources, $21,4/4.43 came from patients' board; $34,288.55 from the state, and $17,296.36 from private sources. As now constituted, White Haven Sanitarium consists of three brick buildings with a capacity of 16 beds each; a barn, pavilion with 32 beds, two infirmaries with 16 beds each; eight shacks with 8 beds each; one large infirmary shack with 16 beds, making a total of 196 beds. Besides these buildings for the patients there are a cottage for the anperintendent, a farmhouse for the employés, a power-house, and many other buildings. Many of these have been erected with a view of later using them as infirmaries with a large bed capacity. The cost of maintenance of the White Haven Sanitarium since the institution was opened, including office expenses of the society, cost of raising money, interest on investment, and repairs and replacements has averaged something less than $7 a week per patient. This, the authorities believe, is the lowest cost of maintenance of any institution of the kind in the world, and yet the dietary is one of the most liberal given in the institutional world. The low cost of maintenance is asserted to be due largely to the system employed at the sanitarium of making work by the patient part of the treatment. All patients who are not on rest are given useful occupation for exercise. This occupation is of the character which is ordinarily paid for in other institutions. The results obtained at the sanitarium show that of the patients who have entered the institution from the beginning, 60 per cent. have left it improved. There have been 18 deaths in the sanitarium since it was opened and, therefore, it can not be said that the good results have been obtained from the selection of cases, and only 20 per cent. of the patients admitted so far have been in the first stage of the disease. Nearly 40 per cent. have had both lungs involved, and nearly 15 per cent. have had well-defined cavities.

Philadelphia.

Personal.—Dr. and Mrs. William M. Sweet sailed for Europe July 4, and Dr. and Mrs. McCluney Radcliffe, Dr. and Mrs. Francis D. Stewart and Dr. Horace H. Jenks, July 2.

Money for Charity.—By the will of the late W. C. Burk, the German Hospital receives $5,000 for the establishment of a free bed in memory of the testator's father, David Burk. The will also bequeaths $5,000 to the German Protestant Home.

Alumni Officers.—At a meeting of the alumni association of the medical department of the University of Pennsylvania, the following officers were elected: President, Dr. James B. Walker; vice-president, Dr. Henry R. Wharton; secretary, Dr. Wilks O'Neill; treasurer, Dr. O. G. Levis.

Ban on Kissing.—By a decree of the bureau of health, "kissing games," as practiced by school children, will be banished from the city's playgrounds. The sixty playgrounds of the city are to be visited daily by the medical inspectors and the 50,000 children will be as carefully guarded against contagious diseases as they are during the school term.

Aftermath of the Fourth.—The cost of the Fourth's celebration in this city counted in the city's hospitals shows that 648 individuals were injured and one death resulted. This is an increase over 1906, when 417 cases were treated in the various hospitals. The death reported was due to severe burns resulting from fireworks setting fire to the patient's clothing. Some of the accidents reported were serious and in some instances eyes were lost.

Health Report.—The total number of deaths reported for the week reached 406, a decrease of 38 from the number reported last week and of 245 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 12; measles, 3; diphtheria, 5; consumption, 54; cancer, 23; apoplexy, 13; heart disease, 33; acute respiratory disease, 41; enteritis, 37; congenital debility, 6; suicide, 4; accidents, 23; and marasmus, 14. There were 137 cases of contagious disease reported with 17 deaths, as compared with 136 cases and 20 deaths reported in the previous week.

GENERAL.

Ohio Valley Meeting.—The ninth annual meeting of the Ohio Valley Medical Association will be held November 13 and 14 under the presidency of Dr. Brooks F. Beebe, Cincinnati.

American Proctologic Society.—At the annual meeting of the American Proctologic Society the following officers were elected: President, Dr. A. Bennett Cooke, Nashville, Tenn.; vice-president, Dr. Lewis J. Krouse, Cincinnati; secretary-treasurer, Dr. Lewis H. Adler, Jr., Philadelphia, and executive council, Drs. J. Rawson Pennington, Chicago; Samuel G. Gant, New York City, and the president and secretary.

Medical Editors' Meeting.—At the annual meeting of the American Medical Editors' Association, held in Atlantic City last month, the following officers were elected: Charles S. Taylor, Philadelphia, *Medical World*, president; Kenneth W. Millican, St. Louis, *St. Louis Medical Review*, first vice-president; H. Edwin Lewis, New York City, *International Journal of Surgery*, second vice-president; Joseph McDonald, Jr., New York City, *American Journal of Surgery*, secretary-treasurer, Wallace C. Abbott, Chicago; William A. Young, Toronto, and David C. English, New Brunswick, N. J., executive council.

Railway Surgeons Meet.—The Baltimore & Ohio Association of Railway Surgeons, at its annual meeting, held in Washington, June 26-28, discussed among other important matters the advisability of making the examination of railroad employés and applicants for admission to employment more strict as regards color perception. The following officers were elected: President, Dr. John E. Russell, Mount Vernon, Ohio; vice-presidents, Drs. Franklin B. Smith, Frederick, Md.; James O. Howells, Bridgeport, Ohio; secretary-treasurer, Dr. James H. Kennedy, Aberdeen, Md.; and assistant secretary, Dr. Walter F. Donald, Pittsburg, Pa. The next meeting is to be held in Chicago.

International Association of Medical Museums.—The first stated meeting of this association was held at the Army Medical Museum, Washington, D. C., May 6, 1907. The committee on organization was empowered to frame a constitution and by-laws and to submit it to the active members. The following officers were elected: President, Major Carroll, Army Medical Museum, Washington, D. C.; vice-presidents, Prof. W. G. MacCallum, Johns Hopkins Medical School, Baltimore; Prof. J. Ritchie, Oxford University, England; and Prof. J. Ludwig Aschoff, University of Freiburg, Germany; secretary-treasurer, Dr. M. E. Abbott, McGill Medical Museum, Montreal, Canada. A bulletin of museum information will be issued to facilitate exchange of specimens. The next meeting is to be held in connection with the Congress of Tuberculosis in Washington, D. C., in October, 1908. The first bulletin of the association contains an introductory statement of the purposes of the association, a full account of the meeting, a list of the organizing members, and an appeal for specimens for the Medical Museum of the McGill University which suffered very serious loss by fire.

Rockefeller Institute Research Workers.—The Rockefeller Institute for Medical Research has adopted the following series of titles for its staff: Member, associate member, associate, assistant, fellow and scholar of the Rockefeller Institute, and has made the following list of appointments, with the department of work specified in each case:

Member and Director of the Laboratories: Simon Flexner (pathology).

Members: S. J. Meltzer (physiology and pharmacology), E. L. Opie (pathology), P. A. Levene (biologic chemistry).

Assistants: Hideyo Noguchi (pathology), John Auer (physiology), Alexis Carrel (experimental surgery), J. W. Jobling (pathology), Nellie E. Goldthwaite (chemistry).

FELLOWS: C. M. A. Stine (biologic chemistry), Donald Van Slyke (biologic chemistry), Martha Wollstein (pathology), Maud L. Menten (pathology), Mabel P. Fitzgerald (bacteriology), Don R. Joseph (physiology), Benjamin T. Terry (protozoology), Thomas W. Clarke (pathology).

SCHOLAR: Bertha I. Barker (pathology).

Grants to aid special researches have been made to the following:

Brown, Robert M., New York.	Manwaring, Wilfred H. Bloomington, Ind.
Bunting, C. H., Charlottesville, Va.	Maury, J. W. D., New York.
Collins, Katherine, New York.	Novy, F. G., Ann Arbor.
Field, Cyrus W., New York.	Ophüls, W., San Francisco.
Foster, N. B., New York.	Pearce, Richard M., Albany.
Goldthwaite, Joel, Boston.	Ricketts, H. T. Chicago.
Jackson, Holmes C., Albany.	Schulte, Herman W., New York.
Kendall, Arthur I., New York.	Simon, Charles E., Baltimore.
Koch, Waldemar, Chicago.	Warthin, Aldred S., Ann Arbor.
MacCallum, W. G., Baltimore.	Wood, Francis C., New York.

CANADA.

Public Vaccine.—The provincial government of Saskatchewan has purchased a vaccine plant and will produce vaccine for that province.

Lepers Transported.—The entire leper colony on D'Arcy Island, B. C., has been transported to China, and there are now no more lepers in British Columbia.

Large Infant Mortality.—The infant death rate in Montreal during the week ended June 29 was the largest in the history of that city. Seventy-eight children under 5 years of age died.

Grocers on "Patent Medicines."—The Canadian Retail Grocers' Association recently met in Hamilton, Ont., and passed resolutions favoring the regulation of the sale of "patent" and proprietary medicines, as proposed by the Dominion government.

Medical Council Meeting.—At a meeting of the Ontario Medical Council, held in Kingston, July 2, the following officers were elected: President, Dr. William Spankie, Kingston; vice-president, Dr. Peter Stuart, Milton; registrar, Dr. John L. Bray, Chatham, and treasurer, Dr. W. Henry B. Aikins, Toronto.

Societies.—The Northern Alberta Medical Association met on the 16th of May and recommended either Dr. Henry C. Wilson, Dr. William A. P. Turman or Dr. Charles W. Cobbett of Edmonton, to be a representative on the Alberta board of health.——The High River District Medical Society was recently organized in western Canada, with Dr. H. W. Welch, Okotoks, as president, and Dr. G. Everett Learmouth, High River, as secretary.

Personal.—Dr. Henri A. Lafleur, professor of clinical medicine in McGill University, has returned from his trip to England.——Dr. C. K. Clarke, superintendent of the Toronto Provincial Hospital for the Insane, and Dr. Edward Ryan, occupying a similar position in the Kingston Hospital, have been sent by the Ontario government to Germany to study and report on the latest psychiatric practices in that country.——Dr. O. M. Jones, Victoria, B. C., has gone on a trip to Europe.——Dr. James D. Lafferty, Calgary, Alta., has resigned from the Alberta medical council to accept the position of registrar of the council.——Dr. Daniel G. Revell, Tyrconnell, Ont., has been appointed provisional pathologist to the Alberta government.——Dr. J. C. Davie, Victoria, B. C., is recuperating at Los Angeles, Cal.——Dr. William A. P. Turman of Edmonton, Alta., has been appointed medical health officer of that city, succeeding Dr. Irving.——Dr. Lewis E. Irving, formerly medical health officer of Edmonton, has been appointed provincial health officer of Alberta.——Dr. Murray MacLaren, St. John, has been appointed principal medical officer of the eighth military district of New Brunswick.

Hospital News.—The Sarah Maxwell Memorial Hospital for Children is to be erected in Montreal, in memory of the heroic action of Miss Maxwell, a school teacher of that city who recently saved so many lives in a calamitous fire which occurred in one of the schools there a few months ago.——Edmonton, Alta., has raised $50,000 for a municipal hospital.——Strathcona, Alta., has bought a site for a new isolation hospital.——The Toronto local council of women are requesting that women physicians be appointed on the new staff of the Toronto General Hospital. Already over 400 applications have been filed for positions on the staff of the proposed new hospital.——The cost per patient per day in each of the four largest hospitals in Canada is as follows: Royal Victoria, Montreal, $1.74; Toronto General, $1.33; Montreal General, $1.54; Winnipeg General, $1.30 1/3.——The Winnipeg General Hospital is reported to treat more patients than any other single hospital in Canada. In 1906 the number treated in the wards amounted to 4,741. In the Toronto General the number was 4,085; Montreal General, 3,458, and Royal Victoria, Montreal, 3,093. The total number of beds in the Winnipeg General Hospital in all departments, exclusive of those in tents, is 352. It costs $13,000 per month to run this hospital, and it has a mortgage indebtedness of $60,000.

LONDON LETTER.

(From our Regular Correspondent.)

LONDON, June 22, 1907.

The Red Cross Conference.

The Eighth International Red Cross Conference was opened June 11. Field Marshal Lord Roberts, who presided, said that since the British Red Cross Society was established in 1870 no less than $2,500,000 had been expended in providing comforts for soldiers and sailors in hospitals. Of this sum $800,000 was spent in the South African war. He expressed the hope that the conference would result in further development of the methods of alleviating the sufferings of war and read a letter from the Queen, the president of the British Red Cross Society, welcoming the first international meeting on British soil. He also read a letter from the veteran pioneer of army nursing, whose services to the British soldier in the Crimean war have earned undying fame, Florence Nightingale. Delegates were in attendance from every civilized country, from whom vice-presidents were appointed, those for Great Britain and the United States being respectively Sir Frederick Treves and Colonel Cary. After discussion it was decided that the income of the Empress Augusta fund, which amounts to $1,000 a year, should be devoted to the establishment of traveling scholarships, so that selected members of the German Red Cross societies could visit different countries and investigate the methods of other societies. Thus the next international conference in 1912 will be provided with a body of experts in international questions.

Breathing Appliances in Mines.

The first report of the royal commission appointed to inquire into and report on certain questions relating to the health and safety of miners is confined to the subject of the use of breathing appliances in mines. The experiments show that the existing appliances have been greatly improved as compared with the earlier types. There are defects, but the question is ripe for further development. Sufficient advance has not been made to justify making the use of any of the appliances compulsory.

Death Rate, Birth Rate and Marriages in England.

Dr. John Tatham, registrar general of births, deaths and marriages, has issued recently the decennial report. The inhabitants of Great Britain have been congratulating themselves for some time on the falling death rate of this isle. Dr. Tatham points out that there is less cause for pride in this respect than is generally supposed, because there is an interdependence between the birth rate and the death rate which has a distinct influence on the figures. *Pari passu* with the decline in the birth rate the age distribution of the sexes has been materially altered, and the proportion of the more robust ages among the total living, has increased while the percentage of children has become less. This makes an undoubted difference in the calculations. Undoubtedly the past 40 years, however, have seen an undubitable fall in the mortality of both sexes in Great Britain. This fall has amounted to about 16.3 per cent. In every case the death rate among females is less than that among males. Says the registrar general: "The health of the adolescent as well as of the adult portion of the community has shown a steady improvement in the period from 1891 to 1900, as compared with preceding years. When, however, the mortality of infants in their first year of life is considered, we are met by the sad reflection that the improved conditions affecting adult life have not been shared by the most sensitive portion of the community." Speaking generally, infant mortality in what may be termed the urban counties of England is higher than in the rural counties by almost one-third. While many of the agricultural counties contain extensive areas in which the deaths of infants under one year average less than 10 per cent. of the births, there are other, and chiefly industrial, counties, such as Lancashire, that contain considerable areas in which the waste of infant life is twice as great as it is in the rural areas. In the past 40 years there has been a remarkable decrease in the deaths from tuberculosis. In the decade 1851 to 1860, 3,457 were set down to this cause for every million people living; in the period 1891 to 1900 the

figure had fallen to 2,010, a decline of 42 per cent. Cancer, on the other hand, though a less frequent cause of death, shows an alarming increase. In the period 1851 to 1860 the deaths from this disease per million of the living population was 325, and in the decade 1891 to 1900 they had grown to 758. In the 40 years the death rate from this disease among males has trebled in England, and among females has doubled. A new English "life table" compiled for Dr. Tatham's report shows that the average lifetime of males, or the mean expectation of life at birth, is 44.13 years. In the case of females the expectation of life at birth is 47.18 years. This is a very considerable increase.

Pharmacology

Reports of Work from the Pharmaceutical Institute of the University of Berlin.

NOVASPIRIN.

Since aspirin, acetylsalicylic acid, has shown some of the unfavorable by-effects of salicylic acid, the manufacturers have introduced a substitute under the title novaspirin, which is said to be free from these objections. The new compound is the disalicylic ester of anhydromethylene citric acid. Anhydromethylene citric acid has been introduced into medicine as a constituent of several synthetics such as citarin (sodium anhydromethylene citrate), and helmitol and new urotropin which are identical compounds of the acids with hexamethylenamin. Anhydromethylene citric acid is formed by acting on citric acid with chlormethyl alcohol, CH_2ClOH. The acid is then converted into the dichlorid by the action of phosphorus pentachlorid and the dichlorid in turn salicylated by the action of salicylic acid in benzene solution in the presence of dimethylanilin.

The examination by Zernik shows that the substance corresponds to its asserted composition. Novaspirin, anhydromethylene citric acid disalicylate, is a white powder, odorless and with a slightly sour taste, melting at 150-151 C. (302-303.8 F.). It is insoluble in cold water, but dissolves with decomposition in hot water. It is easily soluble in alcohol and acetone, less easily in ether, chloroform and benzol.—(Abstracted from *Apotheker-Zeitung*, 1907, No. 40, 395.)

VINOPYRIN.

Vinopyrin is introduced by the firm of Walter Fischer as a new antipyretic, etc., said to be free from injurious action on the heart and stomach. It is said to be a combination of tartaric acid with paraphenetidin. Examination by Zernik showed it to be the bitartrate of paraphenetidin, a substance already described in chemical literature and closely related to acetphenetidin (phenacetin). It is the complete analogue of citrophen, phenetidin dihydrogen citrate, which has been considerably used in doses of from 0.5 to 1 gm. (8 to 15 grains) three times a day as an antineuralgic and antipyretic. Vinopyrin tablets are put up containing 0.75 gm. (12 grains) each and have been found by Zernik to have the same composition as the powder except the addition of a little talcum. The statements of Aufrecht that the tablets contained a mixture only of phenetidin and tartaric acid were not confirmed. One objection to the tablets is the slowness with which they disintegrate and enter into solution.

Vinopyrin is a white crystalline powder with a melting point of approximately 186 C. (366.8 F.). It dissolves in about 25 parts cold water, more difficultly in alcohol and is insoluble in ether. It dissolves readily in boiling water with some decomposition, which gives a red color to the liquid. It is recommended in doses of from 0.75 to 1.25 gm. (12 to 20 grains) three to four times a day.—(Abstracted from *Apotheker-Zeitung*, 1907, No. 39, 383.)

CORYFIN corresponds in composition to the published formula, and is a menthol ester of ethylglycolic acid. It is a colorless and odorless liquid, very slightly soluble in water, easily soluble in alcohol, ether and chloroform, neutral in reaction and leaves no residue on heating. It is recommended as a means for gradually developing the anesthetic and analgesic properties of menthol.

CYSTOPURIN is claimed to be a combination of two molecules of sodium acetate with hexamethylenamin, having the formula $C_6H_{12}N_4.2CH_3COONa + 6H_2O$. It is recommended as a urinary antiseptic. The analysis shows that it does not possess the above composition, but contains a larger quantity of hexamethylenamin than corresponds to the formula and less sodium acetate and water. Attempts to produce a combination of hexamethylenamin and sodium acetate were not successful.

MONOTAL is the guaiacol ester of ethylglycolic acid. It is a colorless oily liquid having a characteristic aromatic odor. Monotal is very slightly soluble in water, easily so in alcohol, ether, chloroform and fatty oils. Its watery solution has a neutral reaction.

FORMIDIN is a preparation put out by Parke, Davis & Co., who claim that it is an iodid of methylene-disalicylic acid and that it has the formula $C_{15}H_{10}O_6I_2$. It is said to be produced by condensation of formaldehyd, salicylic acid and iodin, and is recommended for internal use and also as a dusting powder for wounds. It is claimed that the original constituents are slowly reformed when the product is in contact with alkaline secretions. Zernik states that it is a chocolate-colored, fine amorphous powder which is insoluble in ordinary solvents except alcohol, in which it dissolves to a clear, reddish-brown liquid which remains clear on diluting with water, but precipitates a yellowish flocculent precipitate when an acid is added. Quantitative analysis showed that the substance does not conform to the published formula, but contains about 20 per cent. less iodin; tests failed to show the separation of formaldehyd in presence of either acids or alkalies.

Correspondence

The Scientific Temperance Federation—A New Movement.

HARTFORD, CONN., July 1, 1907.

To the Editor:—All physicians and writers have experienced great difficulty in securing exact data on subjects pertaining to alcohol and narcotics and the allied topics of insanity, crime and hygienic subjects associated with these. Many valuable papers, pamphlets, books and studies have had a very limited usefulness because they were scattered and not gathered and put on file in some central place. Not any of the large libraries do more than file away the various independent publications on these subjects and make no effort to secure a general literature covering all phases of the subject. The physician and the teacher, as well as the writer, have long ago recognized the need of some central agency for the collection and dissemination of the rapidly accumulating facts in this field. The late Mrs. M. H. Hunt of Boston had gathered more than 2,000 books and pamphlets on these subjects, and with this as a nucleus a society called the Scientific Temperance Federation has been formally organized and incorporated under the laws of Massachusetts, with power to hold real estate and receive legacies and endowments to carry on the work of a scientific bureau. Its aim is to bring together the facts developed by scientific research and experience, making them accessible to all persons interested in the great questions of sobriety, alcohol and drink neurosis and hygienic living; and to disseminate such facts in every possible way. Also to enable the specialist and writer to put his conclusions on file, where they can be sought for and examined by every student and worker who is desirous of obtaining exact information along these lines. The federation is not a society for the promotion of any reform movement, but aims simply to collect and keep on file every fact and statement and study made in this country and Europe concerning alcohol, narcotics and allied subjects. It will be a clearing-house as well as a storehouse for physicians, teachers and philanthropists, where societies can deposit and place on file their conclusions; and in turn receive abstracts or copies

of everything written on this subject. A small membership fee will be charged to persons who would like to assist in the development of this work, for which they will receive abstracts or data of what has been written and copies of any future publications. To others, not members, a research fee will be charged for abstracts and copies of papers. The income from this source and from endowments will eventually build up a very rich library and bureau of literature of immense value for the future. Every one interested in helping on this movement should address the secretary, Miss C. F. Stoddard, 23 Trull Street, Boston. Every author of books or papers that bear on the subject of alcohol or narcotics, either directly or indirectly, should send copies to the above address. These papers will be filed, catalogued and put away where they can be used on any future occasion. A large number of distinguished men have become members and the organization is non-partisan in the broadest sense of the word. T. D. CROTHERS, M.D.

Quinin-and-Urea Hydrochlorid in Malaria.

PHILADELPHIA, June 28, 1907.

To the Editor:—In the demonstrations which, following the recent meeting of the American Medical Association, I gave to visiting members, in the medical ward at Jefferson Hospital, I had the opportunity to illustrate the treatment of malarial fever by hypodermic injections of quinin-and-urea hydrochlorid. The patient was a young man with double tertian infection. The injection was made shortly after a paroxysm. According to prediction a paroxysm appeared on the succeeding day, but there were no further paroxysms for six and three-fourths and thirteen and one-half days respectively, although organisms were found in the peripheral blood (also according to prediction) on the fifth and twelfth days respectively, having been absent in the meanwhile. I have made this demonstration repeatedly in my public clinics at the Philadelphia Hospital, and published it occasionally,[1] during the last fifteen or sixteen years. My object in now publishing it again is to ask observers who have skill and opportunity to test, by blood taken from the spleen or other deep source, whether, during the resting period of something less than fourteen days, conjugation of microgametes and macrogametes takes place in the human (avian or animal) body. A single injection of 0.7 to 1 gm. (10 to 15 gr.) in a syringeful—1.5 to 2 c.c. (20 to 30 m.)—of sterilized distilled water, thrown deeply under the skin, and preferably about two hours before an anticipated paroxysm, will secure this non-paroxysmal period of between thirteen and fourteen days in single tertian and between six and seven days in double tertian infection, in almost every case. I have tested it 100 times. According to the time (in relation to the paroxysm) at which the injection is given, and also according to other factors as yet undetermined, the period at which organisms can again be discovered peripherally,[2] varies somewhat, as does likewise the form in which the paroxysm recurs. Sometimes there is full chill, fever and sweat; sometimes only rise of temperature without other disturbance; and between these extremes many varieties. Of course, the injection must be made carefully and aseptically. But if this be done and the point of puncture painted with tincture of iodin, or sealed with iodoform-collodion or sterile collodionized cotton, there will be no local injury.

The coincidence between the 6 to 7 days and 12 to 14 days' periods of freedom respectively following the injection of this most powerful of the quinin salts with the periods of the pre-cystic and post-cystic stages and entire sporogonic (mosquito) cycle of the malarial organism—especially when we recall the old clinical observations of recurrent paroxysms on the seventh and fourteenth days—is suggestive of some fundamental relation between the various phenomena. Just what it is remains to be proved, but it must be connected in some way with a cycle of development different from the ordinary schizogony, that occurs somewhere in the body of the infected person. The "quantitative" explanation does not seem to be sufficient. It would also be of interest to observe the effect, if any, of a very weak solution of the drug on the development of the organism in the mosquito. SOLOMON SOLIS-COHEN.

1. The Polyclinic, Philadelphia, March, 1893, p. 66.
2. Sometimes it has seemed that they could be found more readily at night, but the elements of the problem are not sufficiently clear to warrant an unqualified statement.

Beware of an Alleged Repair Man.

SCRANTON, PA., July 1, 1907.

To the Editor:—Physicians using electric appliances should beware of a man giving his name as "Dr." C. P. Hoffman, claiming connection with Van Houten & Ten Broeck of New York, and proposing to repair appliances. He contracted to clean and rebuild my static machine (June 15, 1907), and to take two days (himself and assistant). They worked spasmodically three hours and packed their tools (while I was absent about 15 minutes) and skipped, leaving my machine one-third torn down and useless, having broken several plates and caused me an unlimited amount of trouble. He is a fraud, certainly no mechanic, and I take this occasion to warn the profession against being swindled. Moreover, I would be pleased to hear of any one he has treated similarly to myself.
D. W. EVANS, M.D.

The Alexander Cancer "Cure."

PHILADELPHIA, July 8, 1907.

To the Editor:—Referring to the editorial in THE JOURNAL, July 6, 1907, on the publication in *Leslie's Weekly* of the report of an alleged clinic asserted to demonstrate the usefulness of Alexander's so-called cancer "cure," I would call your attention to a reprint of the article, issued as an advertising circular, so soon after the publication you have criticised as to leave little room to doubt the commercial origin and connection of both.

The old code of ethics of the American Medical Association well said, concerning nostrums, that their proprietors must confess either to gross inhumanity or to fraudulent avarice. Surely this applies in a peculiar degree to alleged cures for cancer. If a real discovery has been made in the treatment of this sad affection, it should be published to the world, as Beard has published his experience with trypsin and amylopsin, as Jacobi has published his use of methylene blue, and as all other physicians worthy of the name, publish their discoveries, their experience and their suggestions. Concealment could only be for the sake of gain, and to characterize it as inhuman avarice would be mild. But when such concealment exists there is no reason to believe that a genuine discovery has been made; rather is it to be concluded that to inhuman avarice fraud, equally inhuman, has been added. *Leslie's Weekly*, therefore, even if deceived, has lent itself to inhuman avarice; and if not deceived, it has lent itself to inhuman avarice and fraud. SOLOMON SOLIS-COHEN.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

GRAMS AND MILLIGRAMS.

CHICAGO, JUNE 28, 1907.

To the Editor:—In the "Laboratory Manual" by Dr. B. Fantus, p. 21, I find this clear and cogent rule: "In reading quantities including several denominations, only one unit is used, thus 0.065 gm. is read 65 milligram (65 mg.) not 6½ centigram, nor 65 thousandth of a gram." Now, applying the above rule or any other rational rule, how would you read W. A. Jolley's table 2 on p. 1718, vol. xlviii, or this: "Dose of atropin is 0.0004 gm. or 0.4 mg."? Now what I can not understand is what are the exact words, that is, written, read, or spoken words, to express entirely the "unit" 0.0004 gm? If I may not say what I am cautioned not to say in Fantus rule, then I am completely "stuck." We easily say or read 1.0 c.c., or 15.0 c.c., but what is correct reading for 0.3 c.c., is it 3 tenths of a c.c.?
A. H. DE MENDOZA, M.D.

ANSWER.—Among chemists, who use these terms more than any one else, it is customary to use as denominations of weight the gram and milligram, omitting the intermediate terms and occasionally using the term kilogram. Following this custom quantities smaller than a milligram would be spoken of as decimal fractions of a milligram, but would be written as fractions of a gram. A similar

plan is followed with regard to measures of volume which are expressed in liters, cubic centimeters, and decimal fractions of a cubic centimeter. Thus the dose of atropin would be written 0.0004 and would be read four-tenths of a milligram, 0.3 c.c. would read three-tenths of a cubic centimeter. It would be very desirable if physicians would abandon the terms decigram and centigram and express dosage, etc., for small quantities in milligrams and for the larger amounts in grams, with the alternative of using tenths of a gram for quantities between a gram and 100 milligrams.

HIGH FREQUENCY TREATMENT OF ARTERIOSCLEROSIS.

DETROIT, MICH., June 24, 1907.

To the Editor:—Can you inform me in regard to the treatment used by Dr. Houtier, of Paris, for arteriosclerosis?

E. V. RIKER, M.D.

ANSWER.—The treatment referred to is by electricity, employing high frequency currents after a method advocated by d'Arsonval. This method is briefly designated by Moutier as d'Arsonvalisation. Moutier claims that in a few seances, in from four to seventeen, the blood pressure in arteriosclerosis with hypertension can be lowered to normal. Each treatment lasts from two to five minutes. Even normal pressure may be lowered according to d'Arsonval, who asserts a hypotensive action of the current in animals. The details can be found in numerous contributions to the French Academy of Sciences. The following are some of the references: *Compt. rend.*, vol. cxxxvii, p. 1655; cxxxviii, p. 1368; cxxxviii, p. 781; cxxxix, p 238; cxl, (1905), p. 742. In the *Bull. et Mem. de la Société medico-Chirurgicale de Paris*, December, 1899, is an article by Moutier, "Traitement de l'hypertension arterielle par la d'Arsonvalisation." In the *Ztschr. f. Elektrother.*, 1905, vii, 33-40, is another article by the same author, entitled "Die Behandlung der Arteriosklerose mittelst Arsonvalisation." This latter article will, we believe, contain the detailed information desired.

SCROTAL ICE BAG TO STOP PULMONARY HEMORRHAGE.

TEXAS, June 26, 1907.

To the Editor:—A colleague has been using, to stop pulmonary hemorrhage, an ice bag applied to the scrotum. Its action, he says, is reflex. It is being used in some of the sanatoria in Colorado with advantage. In your query column can you tell us something about it? Has it any scientific foundation? L. P.

ANSWER.—The method and its theoretical explanation are probably fallacious. In pulmonary hemorrhage the object should be to lower peripheral blood pressure and prevent the heart from forcing the blood at too high a pressure through the pulmonary circulation. Aconite is, therefore, regarded as one of the best remedies. If the application of the ice bag had any influence it would be to raise blood pressure and favor bleeding.

MEANING OF HEMOGLOBIN PER CENT.—VARIATION IN PULSE RATE SITTING OR STANDING.

LEBANON, ILL., July 2, 1907.

To the Editor:—1. In the report of cases of anemia, when it is stated that the hemoglobin is a certain per cent., what does it mean? Does it mean that 30 or 70 per cent. of the volume of a red corpuscle is hemoglobin?

2. What is considered to be the normal variation in the pulse of an adult sitting and standing? What is the difference between a healthy individual and one with tuberculosis of lungs or with exophthalmic goiter?

J. H. FULGHAM.

ANSWER.—1.-No. Hemoglobin constitutes about 14 per cent. of the volume of human blood and about 95 per cent. of the weight of the dried red corpuscles. In Fleischl's hemometer, the tint with which the blood of patients is compared is derived by a certain dilution of normal blood, which is then imitated by colored glass. In the Tallquist test the color of normal blood absorbed by blotting paper is taken as 100 and the other tints determined by the color given to the paper by anemic blood containing certain percentages of hemoglobin. When we say that a certain specimen of blood contains 50 per cent. hemoglobin we mean that it contains 50 per cent. of the amount present in normal blood. The standards are somewhat arbitrary, however, and frequently blood that comes from perfectly healthy and vigorous individuals will show not more than 80 or 90 per cent. hemoglobin.

2. The difference between the pulse in a sitting and a standing position amounts to from five to ten beats per minute. It is subject to great variations, due to the vigor of the heart and the condition of the blood vessels. In the sitting or recumbent position the blood vessels of the abdomen are usually dilated and the blood pressure is low. On rising these vessels contract and the blood pressure rises; if they do not the heart beats more rapidly to make up for the deficiency and to bring the blood pressure to normal. If the contraction of the vessels occurs slowly the rapid pulse will continue longer than if they respond promptly to the stimulus of rising. Tuberculosis of the lungs is usually accompanied by low blood pressure so that rising would be accompanied by an unusual increase in the pulse rate. The same is true of exophthalmic goiter.

RESORBIN.

GRAND RAPIDS, MICH., July 1, 1907.

To the Editor:—Will you kindly inform me, if possible, of what Resorbin is composed and where it can be obtained? It has been put on the market as a vehicle for mercury in the inunction treatment. F. E. BERGE, M.D.

ANSWER.—Resorbin is a German proprietary article. It can be bought, we believe, from wholesale druggists generally. A German publication (Arend's *Neue Arzneimittel*, 2d edit., p. 450), has proposed the following formula: Almond oil, 25 parts; castile soap, 10 parts; white wax, 15 parts; hydrous lanolin, 30 parts, are melted together, and, while still warm, a solution of gelatin, 5 parts, in water, 15 parts, is added and the mixture stirred until cold. Parts means parts by weight.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 6, 1907:

Macy, Frederick S., asst.-surgeon, ordered to Fort Williams, Me., for duty.

Crosby W. D., surgeon, in addition to his present duties will report in person to the president of the Army Medical School, at the Army Medical Museum Washington, D. C., for duty as instructor, vice Major, W. C. Borden, surgeon; also detailed member of board to determine the results of preliminary examination of applicants, and final examination of candidates for admission to the Medical Corps, vice Major W. C. Borden, surgeon.

O'Connor, R. P., asst.-surgeon, granted 30 days' leave of absence.

Rukke, G. V., King, Edgar, Pillsbury, H. C., Christie, A. C., Johnson, H. H., Bryan, R. W., Goetin, B. S., and Richardson, W. H., asst.-surgeons, will proceed to San Francisco, and take transport to sail from that place about July 25, 1907, for the Philippine Islands, and on arrival at Manila, will report in person to the commanding general, Philippines Division, for assignment to duty.

Hartlett, W. K., asst.-surgeon, ordered to proceed to San Francisco, and report in person to the Medical Superintendent of the Army Transport Service in that city for duty as surgeon on the *Buford* during the trip of that transport to the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

Stanton, S. C., contract surgeon, granted leave of absence for 9 days.

Leeper, J. F., contract surgeon, granted sick leave of absence for 3 months.

Shepherd, J. M., contract surgeon, ordered from New York, N. Y., to Fort Apache, Ariz., for duty.

Tignor, E. P., dental surgeon, order for temporary duty at Fort Leavenworth, Kans., revoked; will proceed to Ft. Adams, R. I., for duty at expiration of leave of absence.

Hollingsworth, R. M., dental surgeon, ordered from Terre Haute, Ind., to San Francisco, for temporary duty; and thence by first available transport to the Philippines Division for duty.

Wing, F. F., dental surgeon, granted an extension of 24 days to his leave of absence.

Voorhies, H. G., dental surgeon, granted leave of absence for one month.

Long, C. J., dental surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Keogh, Mont., for duty.

Wolven, F. H., dental surgeon, granted leave of absence for one month.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 6, 1907:

Russel, A. C. H., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, July 15, and granted sick leave for three months.

Norton, O. D., surgeon, detached from the *Missouri* and ordered to the Marine Recruiting Station, New York, N. Y., and to additional duty in attendance on officers and men of the Navy and Marine Corps in New York City not otherwise provided with medical attendance.

Diehl, O., surgeon, ordered to the *Lancaster*.

Grow, E. J., surgeon, detached from the Marine Recruiting Station, New York, N. Y., and ordered to the Naval Hospital, Navy Yard, Washington, D. C.

Spear, R., surgeon, to the Navy Yard, League Island, Pa.

Spratling, L. W., surgeon, detached from the Navy Yard, League Island, Pa.; ordered to the *Missouri*.

Rose, M. E., Garrison, H. A., Miller, J. T., Trible, G. B., Huffman, O. V., asst.-surgeons, appointed assistant surgeons from June 27, 1907.

Bunker, C. W. O., acting asst.-surgeon, appointed from June 29, 1907.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 3, 1907.

Eager, J. M., asst.-surgeon general, granted leave of absence for one month from July 8, 1907.

McIntosh, W. P., surgeon, granted leave of absence for one month and 15 days from July 25, 1907.

Stimpson, W. G., surgeon, directed to proceed to Bellingham, Washington, for special temporary duty; on completion of which to rejoin his station.

Stimpson, W. G., surgeon, leave of absence granted for 15 days amended to read for 12 days only.

Frick, L. D., P. A. surgeon, granted leave of absence for 3 days from June 22, 1907, under Paragraph 191 Service Regulations.

Billings, W. C., P. A. surgeon, granted 3 days' extension of leave of absence.

Stansfield, H. A., P. A. surgeon, relieved from duty at Havana, Cuba, and directed to report at the Bureau in Washington, D. C.

Schereschewsky, J. W., P. A. surgeon, granted leave of absence for one month from Aug. 1, 1907.

Salmon, T. W., asst.-surgeon, directed to proceed to Richford, Vt., for special temporary duty; on completion of which to rejoin his station at Boston.

Sweet, E. A., asst.-surgeon, leave of absence granted Asst.-Surgeon Sweet for 14 days amended to read for 8 days only.

Simpson, Friench, asst.-surgeon, granted leave of absence for 7 days from June 22, 1907, under Paragraph 191 Service Regulations.

Safford, M. V., acting asst.-surgeon, directed to proceed to Richford, Vt., for special temporary duty; on completion of which to rejoin his station at Boston.

Stevenson, J. W., acting asst.-surgeon, granted leave of absence for 20 days from July 3, 1907, and excused without pay for the further period of 2 months.

Stoddard, C. S., acting asst.-surgeon, granted leave of absence for 30 days from May 20, 1907.

Turbell, H. C., acting asst.-surgeon, leave of absence granted for 10 days from April 15, 1907, revoked; granted leave for 30 days from May 15.

BOARD CONVENED.

A board of medical officers was convened to meet at Richford, Vt., for the examination of an alien immigrant. Detail for the board: Asst.-Surgeon T. W. Salmon, chairman; Acting-Asst.-Surgeon M. V. Safford, Acting Asst.-Surgeon J. H. Hamilton, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service during the week ended July 5, 1907:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, June 15-22, 1 case.
Illinois: Chicago, June 22-29, 4 cases; Galesburg, June 15-22, 1 case; Springfield, June 20-27, 1 case.
Indiana: Indianapolis, June 16-23, 2 cases; Lafayette, June 17-24, 3 cases; South Bend, June 15-22, 2 cases.
Kansas: Kansas City, June 15-22, 4 cases.
Kentucky: Covington, June 22-28, 5 cases; Louisville, June 21-28, 2 cases.
Louisiana: New Orleans, June 15-22, 5 cases, 1 death.
Massachusetts: Lawrence, June 15-22, 2 cases.
Michigan: Detroit, June 15-29, 22 cases.
Minnesota: General, May 1-June 16, 516.
Missouri: St. Joseph, June 15-22, 2 cases; St. Louis, 5 cases.
Ohio: Toledo, May 18-22, 24 cases.
Tennessee: Nashville, June 23-30, 2 cases.
Texas: San Antonio, June 15-22, 3 cases.
Virginia: Richmond, June 15-22, 3 cases.
Washington: Spokane, June 15-22, 3 cases.
Wisconsin: Milwaukee, June 15-22, 3 cases.

SMALLPOX—FOREIGN.

Africa: Lorenz Marques, April 1-30, 3 deaths.
Austria: Trieste, May 25-June 1, 1 case.
China: Hankau, May 11-18, present; Shanghai, May 11-18, foreign 2, natives 20 deaths.
Ecuador: Guayaquil, May 1-31, 4 deaths.
Egypt: Cairo, May 20-June 3, 6 cases, 3 deaths.
France: Cannes, May 1-21, 9 cases, 2 deaths; Nice, 1 case, 1 death; Paris, June 1-8, 10 cases, 4 deaths.
India: Bombay, May 14-21, 1 death.
Italy: General, June 6-13, 27 cases.
Java: Batavia, May 11-18, 4 cases, 1 death.
Korea: Seoul, May 18-25, present.
Madeira: Funchal, June 2-16, 44 deaths.
Manchuria: Dalny, May 18-June 1, 5 cases, 1 death.
Mexico: Aguas Calientes, June 15-22, 17 cases.
Portugal: Lisbon, June 1-15, 10 cases.
Russia: Moscow, May 25-June 8, 17 cases, 4 deaths; Odessa, June 1-8, 2 cases; Riga, 24 cases; St. Petersburg, May 11-25, 27 cases, 2 deaths.
Spain: Almeria, May 1-31, 4 deaths; Barcelona, June 1-10, 1 death; Cadiz, May 1-31, 6 deaths; Huelva, May 1-31, 1 death; Seville, May 1-31, 15 deaths; Valencia: June 9-16, 12 cases.
Straits Settlements: Singapore, April 27-May 4, 1 death.
Turkey: Bagdad, May 11-18, present; Constantinople, May 19-June 2, 3 deaths.

YELLOW FEVER.

Brazil: Manaos, May 11-18, 1 death.
Cuba: Habana, June 24, 1 case, from Union de Reyes.
Ecuador: Guayaquil, May 1-31, 5 deaths.
Guatemala: Puerto Barrios, June 27, 1 case.

CHOLERA.

India: Rangoon, May 4-11, 9 cases.

PLAGUE.

Chile: Antofagasta, May 18-25, 30 cases, 13 deaths.
Egypt: Alexandria, May 30-June 6, 1 death; Assiout Province, 3 cases, 5 deaths; Beni Souef Province, 5 cases, 4 deaths; Keneh Province, 42 cases, 42 deaths; Minieh Province, 2 cases, 2 deaths.
India: General, May 4-11, 91,275 cases, 82,400 deaths; May 11-18, 77,605 cases, 67,681 deaths; Bombay, May 14-21, 124 deaths; Rangoon, May 4-11, 37 deaths.
Peru: Callao, May 18-June 1, 2 cases, 2 deaths; Chiclayo, 3 cases, 1 death; Lambayeque, 1 case; Lima, 8 cases, 3 deaths; Mollendo, 3 cases, 1 death; Trujillo, 6 cases, 2 deaths.

Association News

New Members.

The following is a list of new members of the American Medical Association for the month of June, 1907. Those marked with either star or dagger joined the Association at Atlantic City, those marked with a dagger having previously been subscribers to THE JOURNAL:

ALABAMA.

Fonville, W. D., Ensley.
*McElroy, C. I., Mt. Sterling.
Turner, J. P., Cropwell.

ARIZONA.

Hagan, John, Bisbee.

ARKANSAS.

Amis, J. C., Ft. Smith.
Brown, E. T., Barton.
Duncan, L. D., Waldron.
†Guthrie, Adam, Prescott.
Hamil, W. E., Pocahontas.
Magee, L. F., Frostville.
McCaskill, M. E., Little Rock.
Putman, E. H., St. Francis.
†Wayne, J. K., No. Little Rock.
Youart, J. D., Dyer.

CALIFORNIA.

Bacigalupi, L. D., San Francisco.
Closson, L. M., Los Angeles.
Henry, J. W., San Francisco.
Hewlings, H. A., Pacific Grove.
†Howard, H. W., Los Angeles.
Kohlmoos, H. J., Oakland.
Pottenger, J. E., Monrovia.

COLORADO.

Charles, R. L., Denver.
Dunkel, H. C., Cokedale.
†Johnson, Carl, Montrose.
†Kenney, F. W., Denver.
Toney, M. J., Aguilar.
Williams, J. J., Hotchkiss.

CONNECTICUT.

*Fleck, Harry W., Bridgeport.
†Harrington, J. L., New London.
*O'Neill, Owen, Willimantic.
Sullivan, J. F., New Haven.
†Verdi, W. F., New Haven.

DELAWARE.

Draper, J. A., Jr., Wilmington.
†Samuel, M. L., Wilmington.
*Thompson, Hannah M., Wilmington.

DISTRICT OF COLUMBIA.

†Fowler, H. A., Washington.
†Friedrich, L. L. Washington.
*Wilbur, C. L., Washington.

FLORIDA.

Holloway, H. S., Jacksonville.
†Rogers, C. P., Jacksonville.
Van Valzah, J. A., Daytona Beach.
†Wallace, J. B., Tampa.

GEORGIA.

Adams, W. E., Madison.
*Alexander, W. H., Blakely.
Allen, J. E., Augusta.
Horne, G. T., Augusta.
Hubbard, F. M., Commerce.
Liddel, J. A., Cedartown.
Lokey, H. M., Atlanta.
McKay, M. E., Macon.
†Sawyer, Annie L., Atlanta.
Singleton, O. G., Ft. Valley.

ILLINOIS.

*Avery, F. T., Chicago.
*Barothy, A. M., Chicago.
Bell, F. H., Sycamore.
Church, J. L., De Kalb.
Dietrich, F. G., Freeport.
Farnum, C. G., Brimfield.
Gardner, E. W., Literberry.
Graham, J. A., Chicago.
Gray, P. M., Chicago.
Haeberlin, J. B., Chicago.
Hagey, J. R., De Kalb.
Hamburger, W. W., Chicago.
Hanelin, W. B., Chicago.
Harman, I. C., Chicago Heights.
Hayes, R. F., Freeport.
†Hultgen, J. F., Chicago.
Krohn, W. O., Chicago.
*Love, G. T., Dana.
McIntosh, J. H., Danville.
Murphy, G. S., Waterman.
Myers, Jacob, Chicago.
†Ottis, D. M., Springfield.
Paterson, J. C., Batavia.
Potter, C. A., St. Charles.
Rankin, J. S., De Kalb.
Rothgeb, H. D., Gibson City.
*Ryan, Walter, Springfield.
Schupmann, Albert, Chicago.
Sher, I., Chicago.
Smith, A. E., Freeport.
†Smith, L. W., Wabash.
†Smith, R. A., Chicago.
Weir, S. W., West Union.
†Wherritt, D. H., Chicago.
Wilson, J. F., Versailles.

INDIANA.

Burkle, J. C., New Ross.
*Hoffman, G. E., Logansport.
†Jones, R. E., Clayton.
†Kuhn, B. F., Elkhart.
Sonder, C. L., Columbia City.
†Spigler, O. R., Terre Haute.
Tully, L. H., Lamar.
*White, C. H., Cataract.

INDIAN TERRITORY.

Conn, P. C., Gans.
Rawls, W. E., Pauls.
Reeves, W. B., Wapanucka.
Taylor, John B., Vinita.
Wallace, W. B., Lehigh.

IOWA.

Donelan, J. M., Glenwood.
†Evans, F. B., Dow City.
Henriksen, H. G., Eagle Grove.
†Jaynes, E. T., New Hartford.
Littig, J. V., Davenport.
Martindale, W. H., Marengo.
†Mullarky, Hugh, Manson.
†Mullarky, W. G., Cedar Falls.
†Shore, F. E. V., Des Moines.
Smith, F. C., Lost Nation.
Walker, E. R., Marshalltown.
Warner, E. W., Delhi.

KANSAS.

Crabb, J. A., Topeka.
*Finney, R. M., Kirwin.
*Stelle, H. L., Pittsburg.

KENTUCKY.

Biggs, J. D., Louisa.
Depp, W. G., Summer Shade.
*Falconer, R. G., Lexington.
*Carson, J. O., Bowling Green.
Givens, L. S., Cynthiana.
*Grigsby, G. P., Bardstown.
†Minor, O. R., Louisville.

LOUISIANA.

*Gibson, P., Homer.
†Irion, C. H., New Orleans.
Levin, I. H., Berwick.

MARYLAND.

†Blake, C. F., Baltimore.
*Burnam, C. F., Baltimore.
†Cairnes, G. H. Baltimore.
Clarke, L. B., Baltimore.
Davis, C. R., Baltimore.
Douglas, Eugene, Baltimore.
†Gaither, E. H., Williamsport.
Gough, T. R., Newburg.
†Gundry, L. H., Relay Station.
*Hayden, H. H., Baltimore.
*Jones, C. H., Baltimore.
Janney, P. W., Baltimore.
Jones, C. F., Baltimore.
*Jones, E. L., Cumberland.
Leitch, J. W., Huntingtown.
Mable, G. W., Baltimore.
†Quinn, W. A., Chewsville.
Reinhardt, O. M., Baltimore.
Stokes, S. A., Cambridge.
Townsend, W. G., Baltimore.
Ulrich, J. H., Baltimore.
†Van Ness, E. McE., Baltimore.
*Wegefarth, H. M., Baltimore.

MASSACHUSETTS.

Barrett, E. W., Medford.
Bates, L. B., Boston Harbor.
•Downing, F. C., Lanesboro.
•George, A. W., Boston.
†Good, F. L., Boston.
Hammond, Charles, Hanover.
•Kingman, R. A., Boston.
Riordan, W. D., Lawrence.
•Weeks, J. F., New Bedford.

MICHIGAN.

†Barber, C. L., Lansing.
†Bennett, C. L., Gobleville.
Cadieux, H. W., Detroit.
†Cadworth, L. M., Perry.
†Gallagher, Morton, Bay City.
†Hickey, F. M., Detroit.
Kellogg, P. S., Battle Creek.
†McNamara, W. E., Freda.
Snyder, W. H., Kalamazoo.
†Swaney, H. N., Eagle.
Tomkinson, W. S., Kalamazoo.
Walmsley, D. L., Detroit.

MINNESOTA.

†Ailing, C. P., Minneapolis.
Brown, Sherman, Madella.
Helk, H. H., Minneapolis.
Jern, J. H., West Duluth.
†Nicholson, Elmer, Minneapolis.
†Palmer, W. L., Albert Lea.
Tuohy, E. L., Duluth.
Valentine, W. H., Tracy.
Wright, F. R., Minneapolis.

MISSISSIPPI.

Ferguson, J. J., Greenville.
Harrington, J. B., Crawford.

MISSOURI.

Baltzer, H., Cottleville.
Benham, C. E., Parkville.
†Boehm, J. L., St. Louis.
Bowman, Dora E., Kansas City.
Chandler, J. J., Lutesville.
Evans, R. A., Amity.
Gale, W. S., Osborn.
Garstang, D. B., St. Louis.
Hogeboom, R. W., St. Louis.
Keehn, G. A., St. Louis.
Kimball, A. C., St. Louis.
Morroway, J. H., Ridgway.
Pope, C. H., St. Louis.
Reynolds, A. C., Martinsville.
Reynolds, E. M., Union Star.
Rowland, W. P., Bevier.
Sampson, C. M., St. Joseph.
Stroup, E. R., Weatherby.
Swint, W., Gilman City.
Switzer, Clyde, Kansas City.
Watson, T. S., Bevier.
Whitford, E. P., Westboro.
Wiley, W. H., Ridgway.

MONTANA.

Biddle, A. C., Butte.
Grey, F. S., Miles City.

NEBRASKA.

Allen, G. V., Bancroft.
Corbin, B. X., Schuyler.
•Henry, E. C., Omaha.
†Lehnhoff, H. J., Lincoln.
Waggener, H. A., Omaha.

NEW JERSEY.

Braddock, C. S., Jr., Haddonfield.
†Charlesworth, I. E., Bridgeton.
†Cook, F. B., Laurel Springs.
†Corson, E. S., Bridgeton.
•Davis, H., Camden.
†Day, S. T., Port Norris.
†Ewens, A. E., Atlantic City.
†Foley, M. F., Hoboken.
•Howard, J. E., Haddonfield.
†Laws, G. C., Paulsboro.
•Leavitt, J. F., Camden.
•Lee, B. R., Atlantic City.
•Madden, Walter, Trenton.
†Marshall, Randolph, Tuckahoe.
•McBride, A. F., Paterson.
†Morrison, J. B., Newark.
•Parry, W. C., Hainesport.
•Phelan, Edward, Newark.
•Rafferty, P. P., Red Bank.
†Reese, J. M., Phillipsburg.
•Stanger, P. P., Trenton.
•Stewart, J. M., Paterson.
†Taggart, T. D., Atlantic City.
•Tracy, G. T., Beverly.
•Wilbur, W. K., Trenton.

NEW MEXICO.

Lapsley, J. Y., Van Houten.

NEW YORK.

•Adams, C. F., Carthage.
†Aibee, F. H., New York City.
†Armstrong, A. W., Canandaigua.
†Baner, W. L., New York City.
Banta, E. W., New York City.
†Barnum, M. W., Ossining.
Bassler, Anthony, New York City.
Berkman, J. S., Rochester.
Bingham, J. R., New York City.
Bogart, B. D., New York City.
†Booth, B. S., Troy.
Bostwick, W. W., New York City.
Breed, R. H., Wappingers Falls.
†Brittin, G. S., Syracuse.
Broun, Le Roy, New York City.
•Bullard, W. E., Larchmont.
Bullman, W. F., New York City.
†Burritt, H. M., Kendall.
Cardwell, J. J., Brooklyn.
•Carter, C. E., New York City.
•Chamberlin, E. C., New York City.
•Clapper, W. B., Victor.
†Colles, C. J., New York City.
Comiskey, L. J. J., Brooklyn.
Cuddeback, W. L., Port Jervis.
•Dailey, W. M., New York City.
Dillon, J. A., New York City.
•Dithridge, Louise M., New York City.
†Dolphin, R. E., New York City.
Draper, W. E., New York City.
Evans, A. H., Guilford.
Fulkerson, W. T., Cohocton.
Gillette, Willard, Roseboom.
†Goler, G. W., Rochester.
Graef, Charles, New York City.
Hartshorn, W. M., New York City.
Henderson, A. C., New York City.
†Henry, J. P., New York City.
Herrick, Jessie L., Elmira.
†Hicks, H. M., Amsterdam.
Himmelsbach, G. A., Buffalo.
•Holton, D. C., Brooklyn.
•Hough, F. P., Binghamton.
Jewett, Mary B., New York City.
•Johnson, R. H., Buffalo.
Jones, W. B., Gouverneur.
Kernan, J. D., Jr., New York City.
†Kneer, F. G., New York City.
†Lewi, W. G., Albany.
†Loveland, B. C., Syracuse.
Lusk, T. G., New York City.
•Macpherson, J. D., Akron.
Malcolm, W. J., Jericho.
Malony, J. M., Dundee.
Marxnach, M. J., New York City.
•Mead, Harry, Buffalo.
Meehan, J. H., Niagara Falls.
•Mercer, A. C., Syracuse.
†Meyer, Alfred, New York City.
Meynen, G. K., Jamaica.
•Mosher, Eliza M., Brooklyn.
Muench, W. G., Syracuse.
Murphy, F. N., Stantsburg.
•Newland, F. H., Clifton Springs.
•Nichols, H. B., Pulteney.
O'Brien, J. M., New York City.
†Page, K. B., New York City.
•Palmerston, R. S., Cannonsville.
Phelps, F. Y., New York City.
Potter, W. H., Niagara Falls.
Pulley, W. J., New York City.
Sabel, S. O., New York City.
•Saxer, L. A., Syracuse.
•Schoonmaker, Perry, New York City.
†Sears, F. W., Syracuse.
•Simmons, J. G., New York City.
•Slaight, Mary J., Rochester.
†Snow, E. E., Batavia.
†Snow, W. B., New York City.
•Sturges, P. H., Brooklyn.
Talmey, B. S., New York City.
Thomas, W. S., New York City.
†Vanderlyn, J. Du Bois, New York City.
Wadsworth, Augustus, New York City.
Wagner, C. P., St. Johnsville.
Weston, A. T., New York City.
†Woehnert, A. E., Buffalo.
Wouters, J. F., New York City.
Wright, F. R., Ithaca.
•Zabriskie, E. G., New York City.

NORTH CAROLINA.

Hargrove, W. F., Kinston.
•Holmes, F. H., Clinton.
Keerans, L. C., Charlotte.
†Manning, I. H., Chapel Hill.
†Maxwell, H. B., Whiteville.
•McMillan, B. F., Red Springs.
†Northrop, T. L., St. Pauls.
•Skinner, L. C., Davidson.

NORTH DAKOTA.

Ransom, E. M., Drake.

OHIO.

Ayers, M. M., Ohio City.
Bell, A. J., Cincinnati.
Bradley, Isabel A., Columbus.
Boone, D. W., Bellaire.
Brown, A. L., Cincinnati.
•Buchman, L. A., Pierce.
Butler, O. W., Hartwell.
•Donnelly, Peter, Toledo.
†Eberhard, Le Roy C., Akron.
†Evans, C. W., Springfield.
†Geier, O. P., Cincinnati.
Handley, S. C., Cincinnati.
Hecker, L. E., Dayton.
Hill, A. J., Canton.
Hurlburt, J. W., Uniopolis.
•Keever, B. W. D., Centerville.
•Kinney, J. J., Wooster.
•Kline, Flint, Portsmouth.
Leonard, William, Fostoria.
•LeRoy, B. R., Athens.
•Manchester, W. C., Alliance.
•Metcalf, H. M., Elyria.
•Millikin, C. W., Akron.
†Neal, W. E., Cincinnati.
†Phillips, J. McI., Columbus.
Pyle, H. W., Oberlin.
Reconnelln, E. B., Cincinnati.
Reiff, C. F., Fremont.
Rulmann, R. A., Minster.
†Sloan, C. R., Marietta.
Stage, A. L., Columbus.
†Stewart, W. D., Toledo.
†Strietmann, W. H., Cincinnati.
Tinker, K., Athens.
Virtue, D. B., Iberia.
•West, H. S., Cleveland.
Wright, A. T., Waynesville.

OKLAHOMA.

Carson, F. L., Shawnee.
•McIlwain, Wm., Lone Wolf.
•Miller, W. W., Gotebo.
Moss, R. E., Waukomis.
Norton, Porter, Mangum.
Stolper, C., Kreole.
†Walker, J. A., Shawnee.

OREGON.

Dale, W. H., Harrisburg.

PENNSYLVANIA.

Apery, T. J., d', Philadelphia.
†Bailey, M. L., Carbondale.
†Bauer, R. F., Philadelphia.
Bickings, Mary L. D., Philadelphia.
Bing, E. W., Chester.
Balentine, P. L., Philadelphia.
†Bloomhardt, F. H., Altoona.
†Boyle, J. C., Butler.
†Brown, F. K., Philadelphia.
•Brown, J. C., Smethport.
•Bruner, J. H., Bloomsburg.
Burckhalter, W. W., Laurel Hill.
Caldwell, J. D., Herminie.
Callahan, Andrew, Philadelphia.
•Cameron, J. L., Philadelphia.
•Carnett, J. L., Philadelphia.
•Carrier, Frederic, Philadelphia.
Catterson, A. D., Palmerton.
†Chaffee, Francis, Towanda.
•Cleemann, R. A., Philadelphia.
•Coburn, E., Plumsteadville.
Critchfield, J. B., Ralphton.
†Croft, J. W., Waynesboro.
†Devitt, R. F., Philadelphia.
•Dillinger, C. A., Pittsburg.
†Ditchburn, D. T. Arnot.
†Dixson, J. W., Wilkinsburg.
Dorsett, R. S., Philadelphia.
†Dumm, H. M., Mackeyville.
Earnshaw, M. C., Bryn Mawr.
•Eldon, R. T., Altoona.
Evans, F. H., Chester.
Evans, J. K., Malvern.
•Everett, Edward, Millville.
Feinberg, S. E., Scranton.
•Fetterolf, D. W., Philadelphia.
•Flick, A. F., Philadelphia.
†Garton, A. F., Philadelphia.
Glick, W. H., South Bethlehem.
Gildersleeve, G. H., Philadelphia.
†Goodman, E. H., Philadelphia.
•Gorman, J. A., Philadelphia.
•Grube, J. E., Pennsautawney.
Hensyl, W. C., Berwick.
•Hepler, A. J., New Bethlehem.
†Toban, C. J., Philadelphia.
Hungerbuehler, J. C., Philadelphia.
†Jackson, D. F., Pittsburg.
•King, H. O., Curwensville.
Kline, L. B., Catawissa.
†Knapp, H. R., Philadelphia.
•Knipe, W. H., Limerick.
Kyle, E. B., Philadelphia.
Leedom, John, Philadelphia.
Lehman, W. F., Chester.
†Locke, Melvin, Bellefonte.
Long, W. H., Philadelphia.
Mangee, W. F., Philadelphia.
•Manley, J. A., Scrantos.
Mantz, F. A., Philadelphia.
•McDevitt, C. H., Philadelphia.
McGinnis, Arthur, Philadelphia.
•McGowan, H., Harrisburg.
†McKee, E. D., Sugar Grove.
Miller, W. M., Philadelphia.
†Milnor, M. T., Warrensville.
†Mongel, E. B., Philadelphia.
†Moore, G. H., Schuylkill Haven.
†Murphy, F. A., Philadelphia.
†Muschlitz, C. H., Philadelphia.
Nelman, H. Y., Pottstown.
•Nock, T. C., Philadelphia.
Patrick, Ellwood, West Chester.
†Pfromm, G. W., Philadelphia.
Pilling, G. P., Jr., Philadelphia.
†Price, F. P., Carbondale.
†Pyle, W. T., Swissvale.
•Ramsay, R. F., Philadelphia.
Reddle, J. S., Philadelphia.
•Richards, J. N., Pallsington.
†Richardson, W. M., Norristown.
•Risley, J. N., Philadelphia.
†Shope, S. Z., Harrisburg.
†Siggins, J. B., Oil City.
†Timmons, J. M., West Alexander.
Smiley, Anne R., Philadelphia.
†Stauffer, N. P., Philadelphia.
•Stevens, A. B., South Canaan.
•Stevens, W. A., Hamlinton.
†Stimson, G. W., Philadelphia.
Stitteler, C. L., Chester.
Storer, F. M., Wilkinsburg.
Stover, M. E., Allegheny.
†Stackhouse, C. P., Wilkes-Barre.
Sutliff, Philadelphia.
Tallant, Alice W., Philadelphia.
†Thomas, B. A., Philadelphia.
Twaddell, T. P. H., Philadelphia.
†Van Kory, Wm., Philadelphia.
Wagner, J. A., Scranton.
†Wehlan, Alma L., Scranton.
Welda, G. A., Frederick.

RHODE ISLAND.

•Bennett, J. M., Providence.
Hardman, M. S., Providence.
Yates, Cora G., Pawtucket.

SOUTH CAROLINA.

Parker, J. W., Smithville.
•Sarratt, S. G., Union.
Smith, A., Glenn Springs.
†Weston, Wm., Columbia.

SOUTH DAKOTA.

Brown, P. H., Nemo.
†Young, S. A., Lennox.

TENNESSEE.

†Austin, W. S., Knoxville.
Dunn, T. F., Nashville.
•Frey, J. H., Cheap Hill.
Jones, R. A., Jackson.
Miller, S. M., Knoxville.
†Vaughan, G. E., Clarksville.

TEXAS.

Allen, W. H., Marlin.
Barber, T. H., Waxahachie.
Barnett, G. W., Reynolds.
Bernard, E. D., Port Arthur.
Bishop, Ida E., El Paso.
Black, T. R., Blossom.
Blair, J. M., Houston.
Bradford, C. T., Cooper.
Brown, J. D., Jr., Stephenville.
Brown, J. P., Gustine.
Bryant, A. C., Whitehouse.
Burns, J. W., Cuero.
Carlton, A. L., Nederland.
Carman, E. M., Red Oak.
Cole, C. A., Beaumont.
Collins, J. S., Gustine.
Cox, A. B., San Angelo.
Crabb, R. H., Leonard.
Crawford, C. H., King.
Curlee, W. O., Ector.
Dudgeon, H. R., Galveston.
Duringer, W. C., Ft. Worth.
Eargle, J. H., Lamkin.
Eargle, J. J., Proctor.
Eastham, J. G., Prichett.
Edgar, J. H., Richland.
Ellis, R. V., Paris.
Evans, J. H., Palestine.
Flinn, J. F., Hutto.
French, J. H., Greenville.
Funk, P. C., Bridgeport.
Gibson, J. W., Austin.
Gray, A. J., Comanche.
Holland, J. T., Itasca.
Holt, H. L., Bluff Dale.
•Howard, W. E., Dallas.
Hubbard, R. J., Kaufman.
Hudgins, B. E., Crandall.
Hunter, R. H., Ballard.
Jarrett, J. C., Valley Mills.
Jenkins, W. M., Penelope.
Johnson, R. M., Hereford.
Jones, J. A., Palmer.

Jones, J. S., Galveston.
Kahn, M. S., Hallettsville.
Lankford, A. E., Seldon.
Leverette, C. L., Paris.
Longino, S. B., Sulphur Springs.
MacSechney, Laurie, San Augustine.
Magee, W. E., Chilton.
Martin, T. A., Grand Saline.
McCall, W. P., Ennis.
Moody, Thos., Paris.
Murray, J. A., Walnut Springs.
Paschall, J. G., Dallas.
Peak, F. A., Greenville.
Pierce, F. A., Ferris.
Piemmons, J. T., Clarette.
Price, J. W., Rosser.
Price, W. A., Hereford.
Puckett, J. M., Hallsville.
Randall, L. J., Bridgeport.
Richmond, W. T., Edna.
Robertson, P. F., Rock Springs.
Rosco, Isaac, Amarillo.
Saunders, R. F., Fort Worth.
Seafers, C. F., Port Arthur.
Slataper, F. J., Houston.
Smith, J. A., Greenville.
Smith, W. R., Alba.
Still, J. M., Kemp.
Sullivan, W. R., Mineral Wells.
Tabler, J. N., Rouse City.
*Thurston, D. M., Beeville.
Tindall, C. H., Lonoma.
Trueheart, C. W., Galveston.
*Vance, James, El Paso.
†Williams, E. C., Collinsville.
Williamson, W. A., Coolidge.
Yeager, C. P., Corpus Christi.

UTAH.

†Stewart, C. W., Salt Lake City.

VIRGINIA.

†Barlow, C. H., Portsmouth.
*Coleman, C. C., Buena Vista.
*Corbett, H. C., Arlington.
Edwards, G. M., Newport News.
Fitzgerald, R. S., Richmond.
Gibson, E. L., Staunton.
Miller, C. M., Richmond.
†Moon, S. B., Richmond.
Moseley, E. J., Jr., Richmond.

WASHINGTON.

*Kinnear, C. H., Tacoma.

WEST VIRGINIA.

Albert, C. W., Hinton.
†Campbell, C. R., Chester.
*Campbell, J. A., Wheeling.
Ferguson, J. H., Sweet Springs.
Hume, W. W., Beckley.
Judy, W. J., Mingo.
Kirk, J. B., Elkhorn.
McFerrin, S. A., Falling Springs.
Shirkey, W. F., Malden.
Smith, L. S., Gypsy.
Spangler, A. M., Pageton.
†Thornhill, G. T., Herndon.
Wade, S. S., Morgantown.
†Warden, A. A., Grafton.
Watts, T. H., McComas.

WISCONSIN.

Baker, W. F., Birnamwood.
Crockett, W. W., Beloit.
Flinn, Minnetta C., Monroe.
Grafton, G. A., Hayward.
Judd, W. H., Janesville.
†Knauf, N. J., Chilton.
Leets, H. N., Algoma.
Loofbourow, N. A., Monroe.
Lyman, F. A., Madison.
Mertens, H. G., Bayfield.
Nelson, Norman, Madison.
Quigg, C. E., Tomah.
*Remaly, C. E., Melrose.
Sizer, E. M. A., Fall Creek.
Smith, C. E., Beloit.
Smith, G. C., Jefferson.
Thorne, J. P., Janesville.
Winter, A. E., Tomah.
†Wolter, H. A., Green Bay.

CANAL ZONE, PANAMA.

Bowen, A. S., Christobal.

Marriages

T. MARTIN WIERSEN, M.D., to Miss Inga Norby of Chicago, June 27.

BERNARD S. TALMEY, M.D., New York City, to Miss Cecelia Osborne, June 27.

JOHN A. SHERGER, M.D., to Miss Kreamer, both of Harrisburg, Pa., June 12.

ALBERT F. KAESER, M.D., to Miss Jennie Latzer, both of Highland, Ill., June 26.

PHREEBORN G. PAUGH, M.D., to Miss Alice Jessup, both of St. Louis, Mo., June 23.

CHARLES A. WILSON, M.D., to Miss Caroline S. Reingruber, both of St. Louis, June 20.

IRVING J. SPEAR, M.D., Baltimore, to Miss Hortense Greenwald, at Baltimore, June 24.

FRANK M. MCGAULEY, M.D., to Miss Nora E. McKenna, both of Fond du Lac, Wis., June 26.

JAMES A. RANDALL, M.D., U. S. N., to Miss Edith Adele Thompson of Denver, June 26.

FRANCESCO A. CARUSO, M.D., to Miss Estella G. Bianchi, both of St. Louis, Mo., July 2.

JOSEPH HARRISON HUMPHREY, M.D., to Miss Marie Clerice, both of St. Louis, Mo., July 2.

FREDERICK FRALEY, M.D., Philadelphia, to Miss Mary Lapsley Pyle of Bala, Pa., June 26.

OSCAR W. KING, M.D., Baltimore, to Miss Maud A. Selby, at Washington, D. C., June 26.

JOHN B. DONALDSON, M.D., Lorain, Ohio, to Miss Ida Kindler of Saginaw, Mich., June 27.

JAMES WADE ELPHINSTONE, M.D., to Miss Mary Robinson, both of Allegheny, Pa., June 27.

CHARLES WRIGHT ELLYSON, M.D., Alta, Iowa, to Miss Selma Daum of Albert Lea, Minn., June 26.

MARY EMILY JONES, M.D., Philadelphia, and Mr. Edwin E. Mentzer of New York City, June 27.

HARVEY ELMER YODER, M.D., Cleveland, Ohio, to Miss Blanche Lesh of Fowlersville, Ohio, recently.

H. C. ANTLE, M.D., Renfrow, Okla., to Miss Elizabeth Van Danacker of La Harpe, Kan., June 26.

ROSCOE S. WILCOX, M.D., Rochester, N. Y., to Miss Elizabeth A. Bashore of Mount Wolf, Pa., June 8.

ALBERT ERNEST SMALL, M.D., Melrose, Mass., to Miss Ina Olive Sawyer of Clinton, Mass., June 25.

WILLIS ELLIOT BOWEN, M.D., Rochester, N. Y., to Miss Emily Edwards of Washington, June 29.

ARTHUR J. MCCRACKEN, M.D., Bellefontaine, Ohio, to Miss Jennie Jenkins of Valley Mills, Ind., June 25.

CHARLES ADAMS HOLDER, M.D., Colorado Springs, Colo., to Miss Margaretta Bonsall Taylor, at Philadelphia, June 26.

WALTER PONDER CONAWAY, M.D., Atlantic City, N. J., to Miss Emilia A. Haymaker of West Philadelphia, Pa., recently.

Deaths

Richard Henry Derby, M.D. Medical School of Harvard University, Boston, 1867; a member of the medical societies of the State and County of New York; American Ophthalmological Society, and New York Academy of Medicine; surgeon to the New York Eye and Ear Infirmary; consulting ophthalmologist to the Ophthalmological Hospital, New York Orthopedic and Trinity hospitals; a member of the State Charities Aid Association; trustee of the New York Institution for the Blind, etc.; a well-known specialist in diseases of the eye, died in Litchfield, Conn., July 4, from neurasthenia, after a short illness, aged 63.

Frank Horace Getchell, M.D. Dartmouth Medical School, Hanover, N. H., 1862; Jefferson Medical College, Philadelphia, 1871; a member of the American Medical Association; assistant surgeon of the Third Maine Volunteers during the Civil War; a member of the College of Physicians of Philadelphia, and of many other leading medical organizations, died at his home in Philadelphia, June 27, from spinal injuries sustained in a fall in February last, aged 71.

Albert E. Carrier, M.D. Bellevue Hospital Medical College, New York City, 1865; a member of the American Medical Association and Northern Tri-State Medical Association; professor of dermatology and syphilology in the Detroit College of Medicine, and visiting dermatologist to Harper Hospital, St. Mary's Hospital, Woman's Hospital and Foundlings' Home, Detroit, died suddenly, from heart disease, at the Marshland Club, Detroit, July 4, aged 66.

James William MacIntosh, M.D. Jefferson Medical College, Philadelphia, 1898; a member of the American Medical Association and College of Physicians of Philadelphia; assistant in the surgical department of Jefferson College Hospital, and demonstrator of bandaging in Jefferson Medical College; a specialist in anesthesia, died June 24, at the Pennsylvania Hospital, from tuberculosis, after a prolonged illness, aged 36.

Charles Edwin S. McKee, M.D. University of Maryland School of Medicine, Baltimore, 1858; surgeon of the Third Maryland Volunteer Infantry during the Civil War; from 1874 to 1876 mayor of Hagerstown, Md., and one of the leading citizens of that place, died suddenly at his home in Hagerstown, from cerebral hemorrhage, June 30, aged 71.

Alfred William Ford, M.D. New York University Medical College, New York City, 1872; for more than 20 years surgeon in the police department of Brooklyn, and one time major and surgeon of the Sixty-ninth Infantry, N. G., N. Y., died suddenly, July 2, from cerebral hemorrhage, at his home in Brooklyn, aged 54.

William Mason Price, M.D. Medical Department of the University of Nashville, Tenn., 1865; a member of the Medical Association of the State of Alabama and Lauderdale County Medical Society, and for several years president of the latter; died at his home in Florence, Ala., after a lingering illness, June 29, aged 70.

Alexander H. Hewetson, M.D. Miami Medical College, Cincinnati, 1867; a member of the Ohio State, Eastern Ohio and Belmont County medical societies; one of the oldest practitioners of eastern Ohio, died at his home in St. Clairsville, March 15, four days after an operation for ruptured gall bladder, aged 69.

James P. McNamara, M.D., C.M. Faculty of Medicine of Queen's University, and Royal College of Physicians and Surgeons, Kingston, Ont., 1907; recently appointed house surgeon at the Water Street Hospital, Ottawa, died at the Hôtel Dieu, Kingston, Ont., June 16, after an illness of four weeks, aged 33.

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Albert W. Corner, M.D. Washington University, Medical Department, St. Louis, Mo., 1901; a member of the Montana State Medical Association and Silver Bow County Medical Society, died June 21, in his apartments in Butte, Mont., from septicemia, after an illness of four days, aged 36.

Edward W. Schirmer, M.D. Berlin, Germany, 1878; for many years a practitioner of Johnson and Otoe counties, Nebraska, and recently a resident of Nebraska City, died at St. Joseph's Hospital, Omaha, June 24, after an operation for gall-duct obstruction and pancreatitis, aged 55.

George T. Brown, M.D. University of Georgia, Medical Department, Augusta, 1897; a member of the Medical Association of Georgia and Jefferson County Medical Society; local surgeon for the Central of Georgia Railway, died at his home in Wadley, June 28, after a lingering illness.

William H. Nelson, M.D. Jefferson Medical College, Philadelphia, 1869; a member of the Medical Society of the State of New York and Oneida County Medical Society; for half a century a practitioner of Taberg, N. Y., died recently at his home in that place, aged 77.

John Haviland Otis, M.D. New York Homeopathic Medical College and Hospital, New York City, 1892; charity commissioner of Poughkeepsie, N. Y., and president of the county medical society, died at his home in Poughkeepsie, from heart disease, June 30, aged 35.

Clyde P. Platts, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1892; a member of the Florida East Coast Railway Hospital Surgeons' Association; of White City, Fla., died at the City Hospital, St. Louis, June 26, from anemia, aged 37.

Alexander J. Gould, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1894; formerly division surgeon of the Southern Pacific Railroad at Tucson, Ariz., died at the home of his mother in Toronto, recently, after a prolonged illness, aged 39.

Thaddeus H. Pennington, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1856; a member of the Louisiana State and Bienville Parish medical societies, died suddenly, June 22, while leaving his office in Arcadia, La., to go home, aged 74.

James H. Matthews, M.D. Medical College of Ohio, Medical Department of the University of Cincinnati, 1873; for many years a practitioner of Madison, Ind., died at the King's Daughters' Hospital in that city, June 23, after an illness of several years, aged 61.

Harvey K. Hoy, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1881; is reported to have committed suicide at his home in Altoona, Pa., July 5, by taking carbolic acid, while despondent on account of business losses, aged 57.

John Monsell Peacocke, M.D. College of Physicians and Surgeons in the City of New York, 1883; a member of the Medical Society of the State of New York and Kings County Medical Society, died at his home in Brooklyn, Juy 3, aged 59.

P. W. Capehart, M.D. Georgetown University School of Medicine, Washington, D. C., 1898; once one of the city physicians of Norfolk, Va., died suddenly at his home in that city, from heart disease, June 29, aged 37.

Charles Douglas, M.D. Bellevue Hospital Medical College, New York City, 1875; of Black River, N. Y.; a veteran of the Civil War; died at the City Hospital, Ithaca, N. Y., June 25, after an illness of about a week, aged 65.

Henry H. Clapsaddle, M.D. Albany (N. Y.) Medical College, 1872; a member of the medical societies of the State of New York and County of Otsego, died from heart disease at his home in Toddsville, June 29, aged 66.

Ralph Comer, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1899; a member of the American Medical Association and a promising young physician of Tignall, Ga., died June 26, after a short illness, aged 35.

James Braden, M.D. University of Virginia, Department of Medicine, Charlottesville, 1850; for many years a resident of Indianapolis, died at Gold Hill, Ore., May 12, from influenza, after an illness of five days, aged 82.

William Bradley, M.D. Geneva (N. Y.) Medical College, 1864; formerly of Lockport, Ill., but latterly a resident of Evanston, died June 30, at St. Luke's Hospital, Chicago, from cerebral hemorrhage, aged 69.

Seaborn J. M. Cox, M.D. University of Georgia Medical Department, Augusta, 1873; a charter member of the Edgefield Medical Society, died at his home in Johnston, S. C., June 26, after a long illness, aged 61.

Franklin J. Vose, M.D. New York University Medical College, New York City, 1886; a Brooklyn specialist on diseases of the lungs, died at his home in that city, June 28, from disease of the throat, aged 56.

Frank Vernon Gates, M.D. University of Nebraska, College of Medicine, Lincoln, 1904; died at his home in Glidden, Iowa, June 7, from pneumonia complicated with asthma, after an illness of two weeks, aged 38.

George W. Manwaren, M.D. Eclectic Medical College of the City of New York, 1891; died at his home in Fairbury, Ill., June 25, from uremia, after an illness of about two weeks, aged 56.

Thomas S. E. Pyle, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1868; was found dead in his office in Allensville, Pa., June 29, from heart disease, aged 55.

George H. Crittenden, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1879; died at his home in Madison Station, Davidson County, Tenn., June 28.

Eugene A. Bassett, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; formerly of Chicago, died at Barre, Mass., July 6, from nephritis, aged 67.

George H. Wells, M.D. University of Minnesota College of Medicine and Surgery, Minneapolis, 1888; died suddenly at his office in Butte, Mont., June 30, aged 45.

Benjamin Gorsuch Franklin, M.D. University of Maryland School of Medicine, Baltimore, 1866; died at his home in Westminster, Md., June 24, aged 63.

John Mastenbroek (Years of Practice, Michigan); for many years coroner of Ottawa County, Mich., died at his home in Grand Haven, recently, aged 76.

John Stafford Benson, M.D., M.R.C.S. Eng., died at his home in Chatham, N. B., June 22, after a lingering illness, aged 68.

Thomas M. Brown, M.D. Louisville (Ky.) Medical College, 1886; died at his home in Oakland City, Ind., June 25.

Joseph C. Sayre, M.D. Dearborn Medical College, Chicago, 1904; died at his home in Chicago, July 4, aged 41.

W. D. Welford (Years of Practice, Kentucky), died recently at his home in Jamestown, Ky., aged 70.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

A Live County Society.

The Jefferson County (Ala.) Medical Society has issued a very attractive program for the year, outlining the topics for the weekly meetings. Without following exactly the plan of any other society, a comprehensive program for the year has been gotten up, in which practically all of the different interests in medicine and surgery are represented. The program for July, for instance, is as follows: Monday, July 1, clinical meeting and presentation of cases. Monday, July 8, the following subjects are considered: "Etiology, Prognosis and Treatment of Convulsions in Young Children;" "Infantile Derangements Due to Improper Breast Feeding;" "Home Modification of Milk." The program for Monday, July 15, includes: "Leucorrhea, Etiology and Proper Method of Treatment;" "Dysmenorrhea, Etiology and Treatment;" "Etiology and Treatment of Endometritis." The fourth meeting in the month is given up to obstetrics. The program consists of papers on "The Management of Normal Labor;" "The Use and Abuse of Anesthetics in Obstetrics," and "Postpartum Hemorrhage." The last meeting of the month is taken up by a symposium on non-tubercular joint disease, including rheumatoid arthritis, infections of the joints, etc.

Among the special meetings provided for is a joint meeting with the Birmingham Bar Association and papers on medico-legal subjects, and a meeting with the Birmingham Pharmaceutical Association with a discussion of topics of mutual interest to the doctor and the druggist. The meetings are held in the city hall, in which a special hall is set apart for this purpose. This society is one of the most energetic and progressive in the South, and its meetings are well attended.

The County Society.

In the May number of the *Journal of the South Carolina Medical Association* appears an article on "The County Society," by Dr. J. W. Jervey, read at the annual meeting of the South Carolina state society. Dr. Jervey asks a number of questions regarding county societies which he proceeds to answer. The question, "What is it?" he answers by saying that the county society is the professional and social clearing-house of the medical men of the country; the cemetery of envy, hatred, malice and uncharitableness; the whip that stings the inert to activity and the spur that drives the lazy and self-satisfied. It is a body that can make itself a power to be reckoned with in every phase of life. As to the query, "Why is it?" Dr. Jervey finds the reason for organization in the necessity for association, contact of individuals, diffusion of fellowship and effusion of new ideas. It also increases the strength of the profession and of its individual members.

The greater part of the paper is devoted to answering the question, "How should the county society be conducted?" After emphasizing the necessity for improvement in the conduct of county societies, Dr. Jervey emphasizes the importance of frequent meetings and of permanent meeting places. He also advocates issuing occasional invitations to an outsider to read a paper or discuss a topic. "Invite a good lawyer to give a lecture on forensic medicine or medical jurisprudence." He also urges the importance of an active and energetic secretary, of the selection of proper men on the committees, of the report to the state journal of society matters and universal matters of importance and of regular attendance at the meetings of both the county and state societies as a means of arousing and sustaining enthusiasm.

Colorado Legislature Regulates Publicity.

The Colorado legislature has adopted a bill restricting and regulating advertising and methods of publicity. The text of the bill is given herewith:

AN ACT TO PROTECT THE PUBLIC MORALS BY PROHIBITING THE GIVING OF GENERAL PUBLICITY TO TREATMENTS AND DEVICES FOR THE CURE OR PREVENTION OF SEXUAL OR MENSTRUAL DISEASES, TO PRESCRIBE PENALTIES FOR THE VIOLATION OF THIS ACT AND TO REPEAL ALL ACTS AND PARTS OF ACTS IN CONFLICT HEREWITH.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. It shall be unlawful for any person, association, society, partnership or corporation to circulate, disseminate, spread, print, publish, or cause the circulation, dissemination, spreading, printing or publication of, any public advertisement, announcement, publication, notice or information of the treatment, alleviation, palliation, cure or prevention of any sexual or menstrual disease, weakness or condition; or to display, or expose, to the public view, on any public street, alley or road, any instrument, device or thing designed or intended or sold for the treatment, cure, alleviation, palliation or prevention of any sexual or menstrual disease, weakness or condition. But this act shall not prevent such publication or dissemination of any such advertisement in exclusively medical publications and publications designed and circulated among dealers as trade journals not for public inspection.

SEC. 2.—Any person, association, society, partnership or corporation, who, or which shall violate any provision of this act shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined not less than twenty-five dollars, nor more than three hundred dollars, and in the discretion of the court, may be punished by imprisonment, either accompanied or unaccompanied by a fine, for a period not less than ten days nor more than six months. In construing and enforcing this act, the act of any officer, agent, employé, or servant, acting within the scope of his employment, shall in every case be deemed to be the act of such person, association, society, partnership or corporation.

SEC. 3. All acts and parts of acts in conflict herewith are hereby repealed.

Approved April 3, 1907.

Section Discussions

TREATMENT OF LACHRYMAL OBSTRUCTION.

BY DR. M. D. STEVENSON, AKRON, OHIO.

(*Concluded from page 119.*)

DISCUSSION.

DR. G. E. DE SCHWEINITZ, Philadelphia, emphasized the fact that epiphora does not necessarily mean that dacryostenosis is present, and that it alone should never be the occasion for the use of probes until a most searching examination has eliminated the various possible causes related to refractive error, lack of balance of the ocular muscles, organic and functional nervous disease, paretic condition of Horner's muscle, etc. Many cases characterized by epiphora exist without catarrhal or purulent secretion in which the obstruction in the lachrymo-nasal duct apparently depends on swelling of its mucous membrane and not on true stricture. In these cases, while it is perfectly permissible to dilate the punctum and irrigate the sac and the *ductus ad nasum* with the ordinary antiseptic fluids, treatment of subacute or chronic nasal inflammation is of paramount importance. Injudicious use of probes may induce stricture in a perfectly remediable inflamed and swollen mucous membrane.

A certain number of cases of obstruction in old persons are due not to swelling, nor to stricture, but to contraction, and are associated with atrophic changes in the nasal mucous membrane. Nasal obstructions which have subsided under treatment may reappear on exposure and cause epiphora. The number of cases of stricture, which necessarily require incision and probing, would be greatly lessened if due care along the lines indicated were exercised. There is not the slightest value in the use of very large probes. Excision of the sac is the most satisfactory treatment for chronic dacryocystitis and long-continued suppuration. It is a simple operation, easily performed, and, in many subjects, perfectly feasible without an anesthetic. Careful syringing with suitable antiseptics, with massage over the sac, may be tried, but if it fails the sac should be excised. It is hardly to be expected that the lesions shown by the microscope to be present—dense infiltration of the mucosa, fibrosis of the wall of the sac, and disintegration of the lining epithelium—should be removed by probing and irrigation. Dr. de Schweinitz has never found it necessary, except on one occasion, to remove the lachrymal gland. He has some faith in excision of the palpebral portion of this structure, and as MacNab has recently written, the epiphora after the operation is always much less than it was before, providing the whole of the sac is removed. Epiphora in a nasal duct stricture is due not so much to the mechanical obstruction as to the irritation set up by the secretion retained in the sac which causes reflexly an increased lachrymal secretion. When the sac is removed this reflex stimulation of the lachrymal gland usually ceases, although it may persist as a habit for a few months, and the normal flow of tears is only sufficient to moisten suitably the cornea.

In summary then: Epiphora unassociated with purulent secretion, if found to be really due to dacryostenosis, is often caused by swelling of the mucous membrane, and can be suitably relieved by proper intranasal treatment, associated with dilatation of the punctum and irrigation of the *ductus ad nasum* and sac with suitable antiseptic and astringent lotions. In the presence of a stricture, or failure to induce the fluid to pass through the duct, a suitably sized probe properly passed is a proper procedure, to be repeated at suitable intervals, and followed by the same antiseptic irrigations until the mucous membrane is brought into a healthy condition. This probe can often—indeed usually—be passed, especially through the upper canaliculus, without its incision. Suppurative dacryocystitis of long standing, when there is reason to believe that the walls present the pathologic conditions already described, is best treated by excision of the sac. Under all conditions the most searching investigation of the nasopharynx, and particularly of the ethmoid and antral sinus, is not only an important part of the treatment of lachrymo-nasal disease, but an absolutely essential one.

DR. C. R. HOLMES, Cincinnati, spoke of the advisability of removing the lachrymal gand when it is absolutely necessary to remove the sac. Of course, he said, we all realize the necessity for rhinologic examinations and that the source of trouble in 90 per cent. of the cases lies in the nose. Treatment is required there instead of probing the duct above, but several years ago he undertook the removal of the gland, finding that after removal of the sac there is still epiphora, which is annoying to the patient and he, therefore, looks on removal of the sac alone as an imperfect operation, while it is perfectly safe, under aseptic methods, to remove the gland. He has done the operation 17 times with successful results. There is great satisfaction in being able to tell a patient he will be cured and be free from epiphera. In the early series he did

not remove the accessory glands, and after a few months found that the patient still had epiphora; after that he removed all the accessory glands that he could find. There is slight dryness of the eye for a few days, but the patients are not conscious of it. One can detect it in refracting the patient; a drop of water in the eye will increase the vision. Some of the patients he operated on ten years ago are still in good condition and satisfied with the operation.

DR. W. H. WILDER, Chicago, differed with the essayist, and the first discusser, on the point that most of these patients, especially of the poorer class, must come to operation and that it relieves them of the misery of long probing. Many of the people who can give the time will come back for subsequent probing, but in the clinics he thinks it is the conservative method of treatment. Dr. Wilder suggested a way to make the procedure more simple, namely, the distension of the sac with such a substance as paraffin, which he believes is harmless when thus used. He does not agree with Dr. de Schweinitz that the operation is always an easy one, but with the sac distended with paraffin (and there is now in use a syringe that forces hard paraffin right into the sac), a landmark is provided that helps very much in the dissection.

DR. JOHN S. KIRKENDALL, Ithaca, N. Y., thoroughly agreed with Dr. de Schweinitz and others who had spoken as to operative interference after the ordinary causes have been removed. They failed to speak of one cause, however, that is, refractive errors, which may cause hypersecretion of tears so that the ingress of tears is greater than the egress.

DR. A. G. BENNETT, Buffalo, N. Y., said that he rather hesitated on the experience of one case to recommend very highly a procedure that acted very well in a case of dacryocystitis occurring in a man too feeble to stand a general anesthetic, in which he had opened and drained the sac and packed with iodoform gauze. The inflammation rapidly subsided, but there still kept up a mucous discharge. He then closed both puncta with the actual cautery; the discharge immediately ceased and remained so for a couple of weeks. Then he found that he had only imperfectly closed the upper punctum, and on closing this the discharge ceased, the wound healed absolutely, with no return of the trouble. Dr. Bennett believes that in certain cases by shutting off the tears and using simple drainage with packing and allowing it to granulate and closing the puncta good results may be attained. It will help particularly in that class of cases that Dr. Wilder speaks of as not having time to undergo the long continued probing.

DR. A. E. PRINCE, Springfield, Ill., wished to express himself in favor of excision of the gland. His first experience was in the case of a young man with extreme epiphora coming on spasmodically. He corrected the visual trouble, but still had this difficulty. As a sort of last resort he removed the gland. The healing was complete in twenty-four hours. After that he began to take out the gland in conjunction with excision of the sac, and now whenever he takes out a sac he excises the gland. The operation is simple. He makes an incision through the folds of the skin in such a way that the scar is not seen, and with the exception of a slight amount of ptosis, which usually disappears in a short time, he can not see any objection to it. The results, he said, are very satisfactory, and under aseptic precautions he has never seen a single instance of difficulty.

DR. FRANK C. TODD, Minneapolis, said that there are two methods deserving of consideration which Dr. Stevenson had not gone into. One is that suggested by Gould, of having the patient lie down and dropping into the hollow made at the internal canthus, a solution, followed by massage with the finger over the tear sac. This is with the idea of securing benefit by massage and the entrance into the sac of some such remedy as boric acid solution. This, of course, is only suitable in cases of mild inflammatory conditions, but has the advantage that it can be used by the patient at home. The other is the permanent insertion of gold canulæ. Dr. Todd said that for some years he has been using canulæ in certain severe and suitable cases with great satisfaction. The canulæ, however, must be made of gold and be properly fitted to each individual case. He showed the kind he has had made and used. It must be carefully bent, properly fitted and the ends ground off until it is the required length; the shoulder is made heavy to prevent it from sinking into the canal. He finds that patients are able to draw the secretion through the tube by closing the nose and in this way clear the tube of secretion when necessary. The Dunn dental syringe is, he thinks, a very convenient one to use, for the injection of solutions into the tear canal. Dr. de Schweinitz speaks of argyrol as something harmless, but he wants to warn the members against the use of argyrol. He had one patient in whom the tissues of the orbicularis became permanently discolored. In a still earlier case of a patient in whom the argyrol extravasated into the tissues and caused a swelling, Dr. Todd injected a salt solution the following day and when the swelling subsided the stain disappeared with it. Whether or not this had anything to do with its disappearance he did not know.

DR. M. D. STEVENSON, Akron, Ohio, said that the consensus of opinion seems to be against the removal of the lachrymal glands, but this may be due, as suggested by Dr. Prince, to timidity. Of the replies to the second question only four in this country seemed to have done this operation, and of these but two do it at all times. In removing the gland the orbit has to be opened and exposed to the slight dangers of infection which can never be totally eliminated. The other glands of the conjunctiva ordinarily supply sufficient secretion for the eye, but a flow of tears is useful in removing irritants. If the removal of the sac has been thorough, and sufficient time is given for the conjunctiva to regain its normal condition, there will not be much complaint of epiphora, except when due to special irritations.

THE TREATMENT OF STRABISMUS IN YOUNG CHILDREN.

BY DR. A. R. BAKER, CLEVELAND, OHIO.

(Concluded from page 121.)

DISCUSSION.

DR. LINN EMERSON, Orange, N. J., said that when it is decided that the case is a suitable one for orthoptic treatment the order of procedure is as follows: 1, Refraction objectively; 2, blurring of the fixing eye with atropin; 3, covering the fixing eye with a pad; 4, training of sight, and later of fusion.

The most important matter, he said, is accurate fitting of glasses, and since the child is young and one or both eyes generally amblyopic it must be done objectively. Here the greatest patience and perseverance must be called into play. It is sometimes necessary to see the patient half a dozen times before proper glasses can be ordered as children are often diffident, unruly, or lachrymose. Very small children can not be made to fix any definite object, thus rendering accurate retinoscopy very difficult. To overcome this difficulty he is accustomed to work at half a meter with the light above and slightly behind the patient's head, deducting plus 1.50 instead of plus 1.00. He is thus able to hold the lenses or skiascopes in his left hand, changing them rapidly, and often getting information from a few seconds' fixation which would not be possible by the usual method. He believes that the best time to institute treatment is between the second and fourth years, but does not hesitate to begin earlier if cooperation can be secured. The use of atropin and the pad to the fixing eye should be continued until the patient fixes for all distances with the unatropinized eye, but care must be taken not to follow it up too long as transfer of the squint to the sound eye has been observed. Dr. Emerson said that the amblyoscope is of great value, but practice and skill are required to get satisfactory results with it. Satisfactory work can often be done with a stereoscope and Kroll's pictures. Sometimes vision is so poor that weeks of patient work are necessary before the child can be made to perceive the image with the amblyopic eye. The results, however, are truly astonishing. In the alternating cases where vision is equally good in the two eyes, keeping both eyes atropinized and wearing bifocal glasses has yielded the best results. The orthoptic methods advocated in nowise interfere with the operative treatment to be undertaken later

and are in fact to be recommended after all operations for the correction of squint. These statements are founded on the observation and treatment of about 500 patients during the past four and a half years.

DR. WENDELL REBER, Philadelphia, said that we can say there are four classes of strabismus in children; first, the paretic cases, which constitute from 5 to 20 per cent.; second, those due to congenital deficiency of the fusion impulse; third, the accommodative class, which also is small, possibly 5 per cent.; and, fourth, the largest number is represented by a mixture of these two factors. A child with the congenital deficiency, he said, may recover enough to go through life without strabismus, but if you add to that congenital deficiency a high degrees of refractive error you have the conditions which are the ideal ones for production of paretic strabismus. Dr. Reber's series of cases presented some years ago show a cure of 76 per cent. of children under seven years of age by means of glasses, and he does not think these patients should be tenotomized. We must not overlook the influence of vertical deviations in these cases.

DR. A. E. DAVIS, New York City, is opposed to fitting young children, certainly those under one year, with glasses; he would just as soon think of giving them a set of artificial teeth. He uses atropin. If you want to change the squint from one eye to the other put atropin in the sound eye and make them use the other. In this way you can prevent amblyopia from lack of use. That is all we are justified in doing up to two years. While he believes the objective method should be used, he does not understand how you can get these children under one year to lock in any direction in order to use the retinoscope or ophthalmometer. Another point is that the refraction of the eye at the fovea varies widely from that at the other parts.

DR. LUCIEN HOWE, Buffalo, said that we are confusing two different things. We use that one word strabismus, which is indefinite enough, but we do not say what makes the eye turn in; whether there is an excessive action of the adductors or not. We have come to the point where we must recognize an active esophoria and a passive exophoria. When we have settled that point we have the key to the situation and plan of treatment. We know then whether we should do a tenotomy or put on glasses and whether we should divide widely or do an advancement. What we need, he said, is not better methods of treatment so much as more clearness in diagnosis.

DR. OSCAR WILKINSON, Washington, D. C., said that the longer he practices the more convinced he is that the sooner we put on glasses the better effect we will get from them. It is in those cases which are the longest neglected that we get only a cosmetic effect. There are many of these patients, as you can see from reading the literature on the subject, that are never absolutely cured; never get binocular vision. If we want to attain that, he is convinced that the best method is to put the glasses on as soon as we can. Along this line there is special need of education among general practitioners and parents. It seems that the general practitioners have false ideas in regard to the use of glasses in the cure of these cases. They invariably advise the mothers to wait until the child is five or six years old and then they can have a tenotomy done and the eyes will be straight. In regard to operation in these cases Dr. Wilkinson agrees with the chairman, that tenotomy is never justified in very young patients.

DR. A. R. BAKER, Cleveland, Ohio, said that he has a patient, Mrs. D., aged 51, who, when 4 years old, was taken to Professor Donders in Utrecht by her father (who was a professor in the university) with convergent strabismus. Spectacles were prescribed and according to the patient's statement the same strength lenses were worn until she first consulted him in 1898. The lenses she was wearing at that time were the same as a prescription she had which purported to be a copy of Donders' original prescription. The lenses were:

Left plus 8.50 ax. 75, V. 20/50 plus.

Right plus 1.25 with plus .50 ax. 90, V. 20/30 plus.

A careful examination under a mydriatic gave the same as this, and at the present time she is wearing a bifocal of the same distance lens combined with a plus 2.25 for reading. She has good binocular vision. This case shows that Donders had the courage of his convictions even fifty years ago and was prescribing glasses accordingly, and that his refraction work fifty years ago was as accurate as we do to-day. Dr. Baker said that in his brief paper he attempted to differentiate between concomitant squint and strabismus due to paralyses, congenital cataract, opacities of the cornea, central scotoma and chorioiditis; indeed all cases described by Dr. Posey as congenital squint. His theory is that concomitant squint is due to an error of refraction and can be cured by its correction, if done soon enough. It can not be done by correcting one-third of the error, as stated by one of the speakers. If the child refuses to wear the full correction, it is simply an evidence that you have not done your work well, and it must be done over again.

TENOTOMY.

BY DR. F. C. TODD, MINNEAPOLIS.

(*Concluded from page 134.*)

DISCUSSION.

DR. A. E. DAVIS, New York, said that he did not believe in operating in the conditions for which the operation is proposed to be used most frequently; that is, for latent strabismus, and had little faith in graduated or limited tenotomies for the correction of manifest squint. In his experience the majority of these cases of muscular insufficiency are relieved by wearing the proper glasses, aided by tonics, rest and a sane use of the eyes. He has not had occasion to change his opinion or practice in such cases since presenting his paper in 1901. As to the relative value of complete and limited or graduated tenotomy in manifest squint, even of low degree, his views are not in accord with those of Dr. Todd. That squint of less than 13 degrees may and can be corrected by complete tenotomy, not of one but of two tendons (both the internal in convergent squint, both external in divergent squint), he has demonstrated time and again, obtaining thereby complete single binocular vision.

To the statement that "complete tenotomy is always undesirable," he is utterly opposed. It might be applied to graduated tenotomy, and correctly so, judging from his own experience in such cases. As he said in his paper in 1901: "If the treatment of latent squint by means of prisms and graduated tenotomies is of little practical value, how much less so is the treatment of manifest squint by these means. In fact, the treatment of manifest squint by means of prisms, or by graduated tenotomies, has been abandoned by most oculists, and, at most, is but a sad memory to those who have tried it."

Dr. Davis doubted if sufficient stretching of the tendon could be obtained even by cutting all the fibers of the tendon, but at two separate places. Since receiving the presession papers Dr. Davis tried the operation in two cases of manifest squint; one of 10-degree convergence, and the other of 20 degree, in each of which the operation was not sufficient to correct the error.

With the statement of Dr. Todd that the effect of a complete tenotomy can be varied only by following Panas' method of stretching the tendon previous to tenotomizing, Dr. Davis also takes issue, although he is a strong advocate of the Panas method. While it is true that we may limit the effect of the tenotomy by first stretching the tendon, by stretching the muscle and at the same time temporarily paralyzing it, thus allowing the tendon to attach itself at exactly the place on the globe at which it is left at the time of operation, yet one very important point in the technic of the operation has been overlooked. An important feature in limiting and regulating the effect of a tenotomy is the extent of the dissection of the capsule of Tenon. The effect of a tenotomy may be considerably increased by dissecting the capsule of Tenon widely in the lateral direction from the attachment of the muscle tendon, and also by dissecting the capsule free from the tendon back toward the belly of the muscle, thus permitting the tendon to attach itself farther back on the globe.

To those members of the profession who perform operations for muscle insufficiency, Dr. Todd's operation seems to be the

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ideal method, because the effect may be limited exactly as the operator desires.

Dr. H. V. Würdemann, Milwaukee, Wis., said he had had satisfactory experience with this operation, both to the patient and himself, in a case of esophoria of ten degrees due to excessive version of one internus. As it has only been a month ago he could not answer for future consequences, but the immediate result was good. Here the question comes up, whether or not the operation will give permanent results. Will not the edges of the cut tendon come together, forming scar tissue, and contract the tendon so as to make it shorter than before?

Dr. Francis Valk, New York City, said that this operation seemed to him to be a kind of modification of one recommended by Landolt some time ago in which he made the two cuts above and below the muscle and then connected them by a lateral incision and reattached the two ends of the muscle by sutures. He thinks if either operation is advisable that one would be preferable. Dr. Valk said he can not understand why Dr. Todd, who has given us such an excellent operation as the one done with his tendon tucker, should devise another operation for the same purpose. If you will strengthen a muscle by shortening it with the tendon tucker you will certainly get a better result, more permanent and with more benefit to the patient than by this cutting operation, which, as Dr. Würdemann has said, will probably grow together again. In the case of latent squint, it seems to him that the ideal thing to do is to find out the weak muscle and make it stronger, and one need not be afraid of poor results.

Dr. S. L. Ziegler, Philadelphia, said that he believes this operation of Dr. Todd's is somewhat similar, though not quite the same, as the one he proposed at the Pan-American Medical Congress some fourteen years ago, in which the incisions were made in the tendon, but they were made on either side and opposite to each other, thus leaving a central strand of fibers. With this central strand you have a balance and not the irregular pull or vertical slipping, which you may have in the operation of Stevens. The cut tendon or central strand is then lifted up by the tenotomy hook, and using the scissors as a probe, in the same way that you would to find the optic nerve in performing enucleation, you cut through the remaining fibers that seem to be the strongest in their pull. Then stop and measure how much effect you have and in that way you can graduate your result to the smallest amount. The effect can be graded from as low as ½ or 1 degree, and carried up to at least 8 degrees. It is possible by thinning down the tendon to its very last fibers to get a little more effect. If you desire to carry it further you can possibly get as much as 12 or 13 degrees. You have the advantage of not cutting the muscle completely off, and hence the power of traction is still unimpaired. This is a matter of satisfaction to the patient. The ultimate effect in these cases is to permit perfect balance, and the result is excellent, chiefly because there seems to be less postoperative slipping than by other methods.

Dr. A. E. Bulson, Fort Wayne, Ind., said that he had had some experience with Dr. Todd's operation and the result had been most gratifying up to date. He has operated four times by his method and the results have been very satisfactory. All were cases of exophoria, varying from 5 to 14 degrees. The patients continued with esophoria from three to eight days, which gradually subsided, and in one patient there is at the present time esophoria. The question is as to how permanent it is going to be. Dr. Bulson said he was one of many a few years ago to be taken with the idea of the graduated tenotomy, but he has abandoned that operation, finding that the results were not permanent. He has had under his observation patients who have been tenotomized five or ten times, and were worse than at first; he, therefore, abandoned it. He adopted Dr. Todd's operation with great hesitation, fearing that the ultimate results might not warrant the operation, but the ones that he has done have given great satisfaction.

Dr. G. E. Savage, Nashville, Tenn., said that he wished to say a word in favor of any operation that will put a stop to complete tenotomies. A complete tenotomy should never be done. Dr. Todd's operation is a good one. It is nothing more or less than a partial tenotomy. It is no better than the partial tenotomy devised by Stevens. The mistake that everybody has made is in cutting the tendon without cutting the capsule of Tenon. That should be divided coextensive with the division of the tendon. If this is done you will get results, and the only danger is that you may do too much. Todd's operation, Ziegler's operation, and Stevens' operation are all good. The marginal operation is indispensable in certain cases, but it is a good one.

Dr. Frank Todd, Minneapolis, said that regarding Dr. Davis' operation, in which he spoke of doing this operation in conjunction with advancement in strabismus, he would suggest that perhaps his failure may be due to the fact that he did not do the right advancement operation, which is, of course, the tucking operation. Dr. Tood first did this operation one year ago last February, and has done it alone and combined with the advancement operation. Of course, results secured when done in conjunction with the advancement operation can not be quoted to prove the permanency of the operation. The oldest case in which he has had an opportunity to measure carefully and in which no advancement operation was done, is this one of six months, showing permanency for that length of time. We know that when a complete tenotomy is done on a patient with exophoria and a full effect secured immediately, that some times these patients come back some years later with a return of the original trouble. But these cases are not due to contraction. He believes that contraction will not take place here, if it does not within six months. The other case reported was five months. With reference to Dr. Valk's criticism he believes there are certain cases which require the advancement and certain cases which require lengthening (as note the versions and ductions in the two cases reported), and that it is desirable to do both sometimes, certainly in strabismus it is often necessary to do them together. One must be governed by thorough examinations of each case as to whether lengthening, shortening or both are required.

EXSTROPHY OF THE BLADDER.

BY DR. J. T. BOTTOMLEY, BOSTON.

(*Concluded from page 144.*)

DISCUSSION.

Dr. Hugh H. Young, Baltimore, said that a year ago Dr. Watson of Boston brought out the subject with reference to the treatment of malignant tumors of the bladder, and during the past year Dr. Young has applied the method to one case of malignant disease of the bladder. The plastic operations on the bladder and abdominal wall have been entirely unsatisfactory, he said, because even after the greater number of operations the patient has been left with incontinence which requires an apparatus to collect the urine. The presence of numerous fistulas and the occurrence of calculi made the convalescence of these patients a very tedious and painful one, and even the operation was not satisfactory. The various operations contemplating the transplantation of the ureters into the rectum certainly have not been satisfactory, and there has been a large mortality. The operation devised by Dr. Bottomley, Dr. Young thinks, promises good results. It seems to be a rational one. The abdominal defect can be restored and the hernia that is nearly always present can be cured, while with the apparatus devised the patient is given perfect comfort for the remainder of his days. Dr. Young's patient had an inoperable tumor of the bladder; he did a double nephrostomy according to the suggestion of Dr. Watson. The patient is still alive, although he has two tubes running into his kidneys. These tubes carry off the urine very satisfactorily. Dr. Young thought with Dr. Watson that to use the ureters instead of doing a nephrostomy would lead to pyonephrosis, and the fact that the ureters were unable to drain the kidneys thoroughly led him to suppose that there would be a considerable amount of retention, and that the patient would be more liable to die from transplantation of

the ureters than following a nephrostomy. With a permanent drainage tube there is always renal infection, but if there is good drainage, he said, this does not amount to much. Dr. Young feels certain that many cases of enlarged prostate are associated with renal infections. The fact that he now has 82 cases without a single death after perineal prostatectomy shows that if the obstruction be removed any renal infection that may be present will take care of itself. The use of a large amount of a good mineral water ought to check a renal infection and let the patient live, even though a pyelitis be present.

DR. GUY L. HUNNER, Baltimore, said that in his opinion the Peters operation, called by Dr. Bottomley the London operation, is the one best suited to this condition. Surgeons have not yet had sufficient experience with the operation to draw any satisfactory conclusions. Dr. Hunner believes that 10 cases have been recorded in which this operation was done, and it seems to him that for so serious an operation, as any on the ureters is bound to be, the death rate has not been high. There have been but two deaths in the 10 cases, and one of these Peters rightly ascribed to a mistake he made in leaving in his renal catheter after operation, thus causing an ascending infection. Dr. Hunner said that if he had a child that had to have an operation for this trouble he would certainly take a chance on implantation of the ureters into the rectum. He does not believe that the patient is any better off to have the ureters transplanted posteriorly. Any one who has to wear a rubber bag under the clothing is in a most unfortunate condition. Peters wrote Dr. Hunner not long ago that of his five patients four are now living, the first seven years after operation. They hold the urine from one to four hours during the day, and from six to eleven hours at night. It seems to Dr. Hunner that this is something worth taking a few risks for. The operation itself—the extraperitoneal implantation of the ureter down along the side of the bladder into the side of the rectum—should be practically without risk.

DR. F. GREGORY CONNELL, Oshkosh, Wis., said that the question of ureterorectal or vesicorectal anastomosis has resolved itself into the prevention of ascending infection. That such infection does not occur if the ureteral orifice is preserved intact, is well shown by a case which he has under observation at present. The patient, a male, aged 32, was born with an imperforate anus. The attending physician made an opening into the rectal pouch, but, in addition, punctured the neck of the bladder. This opening between the rectum and the bladder has never closed, and most of the urine has been passed by rectum. Eight operative attempts have been made to close this communication, but when seen by Dr. Connell there was an opening surrounded by dense connective tissue of sufficient size to admit the tip of the index finger. The patient is entirely well physically, and there is no evidence of kidney infection 32 years after the opening into the rectum was established.

DR. JACOB FRANK, Chicago, declared that many things must be taken into consideration when operating for exstrophy of the bladder. He made a number of experiments on dogs several years ago, and found that every dog who had the ureters cut off and transplanted into the rectum had an ascending infection and died sooner or later. This was not the case when the ureteral openings were preserved. In one case a culture was made from the kidney and proved negative. The fact that in Dr. Connell's case the ureteral openings were preserved explains why the patient did not become infected. Dr. Frank said that he can not see that the patient will receive any benefit from transplantation of the ureters from the front to the back. The patient must wear some sort of an apparatus, the ureteral openings are destroyed and ascending infection is favored. It is known that if, by transplantation of the ureters, any pressure is caused on them, sooner or later the patient will have some form of kidney disease. Dr. Frank said that he has devised an operation which has not been done much on the human being. His experiments on dogs consisted in making an opening between the bladder and the rectum or sigmoid flexure. He does not see why one should destroy the bladder wall, the mucous membrane of which is accustomed to urine. If in some way that bladder can be utilized as a urine receptacle it ought to be done, and he thinks that there are cases in which the baldder is large enough to permit the opening to be made between the rectum and the bladder, utilizing the latter by shutting it off and closing it over, thus making an entirely new bladder. Experiments on dogs have shown that if the bladder is anastomosed to the intestines, the mucous membrane of the bladder wall takes on the functions of the mucous membrane of the intestine, and ascending infection will not take place if the ureteral openings are preserved.

DR. AP. MORGAN VANCE, Louisville, Ky., stated that several years ago he operated on a young man of 19 for exstrophy of the bladder. The man is getting on well, is married and carries on a large business. Dr. Vance did an autoplastic operation on that man, which he thinks should be carried out in every case. He fails to see the advantage of putting a hole into the patient's back for the purpose of carrying off the urine.

DR. J. T. BOTTOMLEY, Boston, said that he did not mean to claim that this operation is a perfect one, nor did he put it forward simply as an operation for exstrophy of the bladder. It may be used in such cases, but its most important use, he believes, is in cases of inoperable bladder conditions in order to relieve the patient of distressing symptoms. But considering exstrophy of the bladder alone, it has been admitted and known for many years, that plastic operations for relief of the exstrophy are exceedingly unsatisfactory. Fistulas form and calcification takes place and repeated operations are necessary. Besides this, the patient must of necessity wear an apparatus for collecting the urine, and it must be worn in an exceedingly uncomfortable place. The Peters operation is an excellent one, but all operations of which implantation into the rectum is a part are attended by the danger of infection of the kidney. That can not be disregarded. So far as statistics go, 12 per cent. of all operations in which the ureters were implanted into the rectum have been followed by renal infection. Of course, implanting the ureters into the loins is not a pleasant procedure and it does not leave the patient in a pleasant condition, but it is choosing the lesser of two evils, because if the rectal implantation is done there will almost certainly be an ascending infection sooner or later.

THE TECHNIC OF APPENDECTOMY.

BY DR. J. A. WYETH, NEW YORK.

(*Concluded from page 124.*)

DISCUSSION.

DR. JOHN E. CANNADAY, Hansford, W. Va., said that he did not believe that a four-inch incision is an absolute necessity, or that it is even desirable. He held, with Dr. Robert T. Morris of New York, that a two-inch incision is long enough for most cases and that in some cases an inch and a half incision may do. The incision he favors would be made through the rectus muscle, either separating the fibers, as Dr. Wyeth described, or making the McBurney incision. He believes that the McBurney incision is favorable because it gives the gridiron effect and it leaves a better and stronger abdominal wall after healing. There are no nerves or blood vessels of importance cut, so muscular atrophy will be avoided. In regard to hemorrhage following the inversion method, he thinks this can be avoided by following the technic suggested by Dr. Davison of Chicago, who carries a ligature under the artery. The arterial supply of the appendix usually comes through the mesoappendix, yet at times the artery is misplaced and is carried in the wall of the cecum to the base of the appendix. These are the cases that will bleed after operation. If the purse-string suture is carried under this vessel, where it passes through the wall of the cecum, then such bleeding can not take place. A good deal of dissection can be done in many cases by a well-trained finger, especially where the adhesions are of a comparatively light type. Dr. Cannaday does not believe that a good quality of chromic catgut will break down before the wound has had time to heal, and

he believes that cauterization and sterilization of the stump of the appendix with the thermocautery is better than the use of carbolic acid, or at any rate just as good, and it takes less time. In a recent number of THE JOURNAL (June 1, 1907), he described a slight modification of the usual method of inversion of the stump of the appendix, which, he thinks, has something to commend it. The use of a buried non-absorbent suture of silk may cause trouble afterward. If there is any suppuration around the buried suture, as when part of it protrudes into the lumen of the bowel, the suppuration will persist until the suture comes away. If catgut is used, it will be absorbed and nothing like that happens. Of course, a buried suture of fine silk or Pagenstecher thread will seldom give any trouble, but now and then it will.

DR. R. H. M. DAWBARN, New York City, said that the purse-string suture is being used more and more, and frequently hemorrhages have been the consequence of the surgeon's neglect to tie the artery in the stump of the appendix. It is a question of anatomy. One-half of the appendices get their blood supply through the mesoappendix. The other half get it through the appendix itself. It is the latter supply that cause trouble. If the stump is crushed thoroughly, or if each blood vessel is tied individually, as it should be, there will never be any hemorrhage. As to the material to be used: Since Dr. Willy Meyer years ago proved that linen thread and silk are tolerated equally well in the tissues, linen being the strongest and not weakened by boiling, there is no excuse for using silk in surgery.

He said that whenever we have gangrene of the cecum or appendix, it is not caused by the streptococcus, but by microbes of less virulence, namely, the *Bacillus coli communis* and the *Proteus vulgaris*. When he has to do with a case where the odor of the pus is not offensive, he puts in two rows of sutures, because he knows that he has to deal with more virulent germs. The cecum is the largest part of the large intestine and the ileum the smallest of the small intestine, and you can reduce the cecum three-fourths without obstructing the exit of the ileum, and because it is so thick there is no danger in putting in a purse-string suture by going through the thickest part of the intestine.

DR. EMORY MARVEL, Atlantic City, declared that Dr. Wyeth's paper impressed him as dealing with the technic of a simple appendectomy, in which no complications had arisen and in which the disease had limited itself to the appendix. First, Dr. Marvel does not see the necessity for a four-inch incision. In the majority of cases, unless there is very much fat, the appendix can easily be reached with a small incision, say an inch or an inch and a half in length. So why make a longer incision? If the patient is a woman, and there is need for going beyond the appendix to the pelvic organs, when these are involved, the Deaver (splitting right rectus) incision seems to be the one most clearly indicated. That gives one the opportunity of removing, if necessary, the ovary and tube at the same time with the appendix. Dr. Marvel stated that he has had one secondary hemorrhage in an appendectomy, fortunately not fatal. He does not believe that it was due to faulty technic, but to failure to carry out what he intended to do, or carelessness on his part. He does not see the necessity of putting a ligature around the appendix if the organ has been crushed and the mucosa is crushed out and only the peritoneal coat is left. He can not see any objection to excising the appendix, or to the use of the Lembert suture, or the method which Dr. Joseph Price uses (two invaginating sutures) for the care of the stump of the appendix. The use of carbolic acid and the actual cautery seems to Dr. Marvel to be an additional precaution which is not necessary.

DR. C. VAN ZWALENBURG, Riverside, Cal., called attention to one point which emphasizes the necessity of operating early, that is, that appendicitis in its beginning is in reality a strangulation. All have seen appendices removed that were fully distended so that in removing them it was feared that they would burst during the removal, and some have burst. This was within the first forty-eight hours of the disease. Every appendix, in a measure, comes to this point when it is acutely inflamed. The cause of appendicitis is obstruction; not always at the point of junction with the colon, but in some portion of its lumen.

If the obstructing plug is very small, the gradual distension of the appendix will quickly drive it out, and we have to deal only with the infection which is present at that time. A short time ago he made some experiments on dogs. He drew a loop of intestine out of the abdomen and placed it under a microscope. To the bowel was attached a compression apparatus which could be regulated, and a small electric lamp was introduced into the intestine. In that way he could study the circulation of the intestine very nicely, under varying degrees of pressure. At 30 mm. pressure there was a very decided slowing of the circulation, so slow that it was easy to see the individual corpuscles. At 60 mm. pressure there were very many blood vessels in which blood had ceased to circulate. At 100 mm. pressure there was practically no circulation at all, and at 130 mm. pressure the circulation was entirely occluded. Dr. Van Zwalenburg succeeded in demonstrating the same thing in the appendix of a dog. This interference with the circulation from over-distension of a hollow viscus is, to his mind, a very important one. He presented a specimen of a gangrenous appendix that was removed postmortem, three days after the appendix burst. The point I wish to emphasize is that the mesoappendix is not gangrenous; the gangrene is confined to the portions of the lumen of the appendix which were involved in the strangulation from overdistension.

DR. JOHN A. WYETH, New York, referring to Dr. Cannaday's suggestion to ligate the artery as a precautionary measure, said that the ligature around the stump ties everything. Why, he asked, take any extra precaution? For this technic, he said that there is no good catgut. Here linen and silk alone are good; they can not be broken. Dr. Wyeth prefers infection and opening up an abscess to holding a postmortem in a case in which death is due to any form of suture. In case of bullet hole in the intestine Dr. Wyeth uses the purse-string suture. In the peritoneum he makes only an inch incision. He asked: "Why crush the stump when everything is securely tied?" When the mesoappendix and the appendix are tied, all the arteries are tied also. If every patient with appendicitis were operated on within twelve hours of the appearance of the first symptoms, Dr. Wyeth asserts that the death rate would not be even three in 1,000 when the operation is done by competent men. He mentioned a case in which Dr. Grant of Denver tied on the appendix and the patient recovered, and also stated that Dr. Cordier of Kansas City, Mo., has done 1,200 operations for appendicitis with the ligature without a death.

LIGATION OF CAROTID FOR HEMORRHAGE OF VITREOUS.

BY DR. G. S. DERBY, BOSTON.

(*Concluded from page 110.*)

DISCUSSION.

DR. WILLIAM H. WILDER, Chicago, said that this appears to be a very heroic remedy for a very serious condition, and it may be compared to the decompression operation for optic neuritis. Whether it will prove any more satisfactory or not remains to be seen, but one should naturally resort to it only in those extreme cases in which blindness in the remaining eye is threatened. One would not be tempted to resort to such a measure when one eye is perfectly sound, but even then one must consider very carefully the dangers of ligation of the common carotid artery. Dr. Wilder said that he discusses this paper purely from a theoretical standpoint, not having had any experience with the measure, but all ophthalmologists are seeing cases of this kind and wondering what can be the cause of these hemorrhages. He referred to a case which he has seen. A strong, healthy man of 19, sent for consultation, had had sudden blindness coming on in the right eye. He was in perfect health; a strong, young fellow, with no suspicion of syphilis or tuberculosis, who suddenly, four days before Dr. Wilder saw him, noticed a dimness of vision coming on and, blindness soon supervened. He had only light perception in

that eye and when the ophthalmoscope was used the pupil was perfectly black, and only at one place was there a red reflex; nor was anything to be seen floating in the vitreous. Dr. Wood also saw this case and agreed that it was a case of spontaneous hemorrhage in the vitreous. The cause was obscure. The patient was placed in the hospital, and the blood was examined as to its opsonic index, which was found slightly lowered. Tests were then made with tuberculin, using 1 mg. of the old tuberculin; there was no reaction. Later 3 mg. were injected and a faint general reaction followed—only a slight malaise, with three-quarters of a degree of fever. Some days later 5 mg. were used and there was a marked general reaction, with temperature of 103 F., and not a well-marked but distinct ciliary injection of the right eye and some even of the left. The man refused to remain for treatment, but went back west. In another somewhat similar case a man had lost completely the sight of his left eye, from what cause was not clear, and there was a calcareous cataractous lens in the eye. In the right eye was the condition before described—perfectly black pupil. It was impossible to get any view of the fundus. Dr. Wilder resolved to try tuberculin in this case. Unfortunately, the patient was not examined in the same scientific way as was the other, but at any rate he was given a diagnostic dose, 1 mg. being used, and somewhat to Dr. Wilder's surprise there was a well-marked general reaction and also a well-marked local reaction—ciliary injection, pain in the eye and signs of uveitis. Treatment was begun with tuberculin in small doses, gradually working it up until after several months this man's vision, which had been reduced to *nil*, began to improve. To-day his vision is 20/60 in the right eye; no change occurred in the left.

DR. JOHN E. WEEKS, New York, said that he thinks that the case reported by Dr. Derby and the last case of Dr. Wilder's belongs to the category of what is ordinarily known as retinitis proliferans. It is known that that affection, which is usually congenital in its origin, affects both eyes almost invariably; that it is characterized by the presence of new-formed tissue in the vitreous; that it originates primarily in cases not of the congenital variety and possibly in the congenital variety in hemorrhage, with the formation of coagula, and that the membrane subsequently develops. On this membrane are new-formed blood vessels, which possess very thin walls, and from these the hemorrhages, which have been termed malignant hemorrhages, take place. Treatment by ligation of the common carotid artery can not change the character of the walls of these new-formed blood vessels, and if collateral circulation is sufficient again to fill these vessels the ligation can not be of any value, as the hemorrhage into the vitreous will recur. There are two other causes for the development of retinitis proliferans; one is syphilis and the other traumatism. The development of the membrane and blood vessels is the same in both cases.

DR. HARRY FRIEDENWALD, Baltimore, in a paper published several years ago, called attention to the fact that in several cases he had observed there was evident disease of the finer veins throughout the course of the trouble, and that these changes in the veins often preceded the hemorrhages. He has since then observed other cases of the same kind in which decided, sometimes very extensive, changes in the finer veins existed. Another point: these hemorrhages recur a number of times in some cases, and he is afraid that in such cases the eyes would be permanently lost. In all the cases that he has been able to observe for any time the hemorrhages ceased after a while, and he has several cases still under observation in which no hemorrhages have occurred for a number of years, and the patients have very good vision.

DR. S. D. RISLEY, Philadelphia, mentioned a clinical fact observed after ligation of the common carotid for the cure of an aneurism situated in the cavernous sinus. Up to the time of ligation there had been no marked changes in the fundus of the eye, but twenty-four hours later the entire ground was studded with large hemorrhagic patches. He has not been able to explain satisfactorily the mechanical reasons for such an occurrence. Its possibility should be considered when advising ligation of the carotid for any cause.

DR. ALLEN GREENWOOD, Boston, said that perhaps he could answer Dr. Weeks' question as to the probable cause of hemorrhage in the case mentioned. He saw the patient with Dr. Derby, and both eyes presented the characteristic proliferating condition in the vitreous, so much so that there was the appearance on first examination suggestive of the remains of the hyaloid artery. This condition existed in both eyes, and was very characteristic of proliferation. Dr. Greenwood suggested that Dr. Derby try lactate of calcium before tying the common carotid. Dr. Weeks' explanation of the lack of good result is probably the correct one; that is, that the hemorrhage was from weakened vessels within the proliferating tissue.

METASTATIC CONJUNCTIVITIS IN GONORRHEA.

BY DR. JAMES J. CARROLL, BALTIMORE.

(*Concluded from page 114.*)

DISCUSSION.

DR. ROBERT RANDOLPH, Baltimore, said that he had never seen a case of metastatic gonorrheal conjunctivitis. In several cases in which he thought this condition present it proved to be the forerunner by a few hours of an iritis. The involvement of the iris is accompanied by marked changes in the conjunctiva and these changes in his experience at least, seem to be more generally distributed over the ocular conjunctiva than is usually seen in iritis from other causes. It seems to him that a gonorrheal conjunctivitis of metastatic origin is one which runs its course without coexistent iritis. The first case which Dr. Carroll reports was doubtless a genuine case of this form of conjunctival inflammation, for although iritis occurred, there seemed to be a definite period of time between the conjunctivitis and the outbreak of the iritis, during which period the eyeball was apparently free from inflammation. Dr. Randolph does not think, however, that the same view can be taken of the second case. This case was seen on the fourth day and was characterized by the phenomena of an intense conjunctivitis, which involved also the subconjunctival tissue. On the next day iritis showed itself and Dr. Randolph is disposed to regard the case as one of metastatic iritis, accompanied with the usual conjunctival changes which are particularly pronounced in this variety of iritis. It is important, too, in this variety of conjunctivitis that repeated examinations of the conjunctival exudate be made so as to be certain that no gonococci are in the conjunctival sac. The failure to find gonococci in this location the first and second time would not justify one in concluding that they are not there. He thinks that such an examination should be made every day and that not only coverslips should be made, but also inoculations into the proper culture media, and that the failure of these two methods to reveal gonococci would probably be sufficient grounds for regarding the case as one of metastatic origin. Just as Dr. Carroll has intimated, the exact way in which the metastasis takes places is unknown, so Dr. Randolph is inclined to think that the toxins of this organism, which are doubtless in the conjunctival fluid, are sufficiently irritating to lower the resistance of this part of the eye, and thus an opportunity is given to those bacteria which are always present in the conjunctival sac to multiply, in other words that there is here a mixed infection.

DR. HIRAM WOODS, Baltimore, said that Dr. Carroll had asked him to see Case 2. It presented the picture of plastic iritis with mucopurulent conjunctivitis. This association seems the rule; first, conjunctivitis, with more or less purulency (and in this respect differing from the conjunctival hyperemia preceding iritis), followed rapidly by iritis. Dr. Woods narrated a case which may come under the class of metastatic conjunctivitis. A woman, aged 34, was first seen in 1903, in consultation with Dr. Howard A. Kelly of Baltimore. She was an invalid from plastic pelvic inflammation, having its origin in gonococcic infection several years previous, after marriage. Dr. Woods was asked to determine, first, the possibility of ocular origin of headaches; second, cause of recurrent conjunctival and circumcorneal right hyperemia, associated with

mucous secretion. Refraction error was trifling. Several times in the space of two or three months the right eye showed mild catarrhal conjunctivitis, usually associated with circumcorneal injection. Never was there iritis. During these months the patient had intermittent vaginal discharge, gonococcic in nature. From 1903 to February, 1907, Dr. Woods did not see her. Returning to Baltimore she told him of the continuance of her old eye trouble. It was deemed advisable in February, 1907, to give her an injection of gonococcic vaccine. In forty-eight hours there was profuse vaginal discharge containing gonococci. At the same time she presented definite right mucopurulent ophthalmia. The condition was the same as observed four years ago. There was slight circumcorneal injection as before, but neither cornea nor iris was involved. It seems evident that during these years there has been latent gonococcic infection. Several pelvic operations have been performed, some trivial, others serious. There have been two relapses of conjunctival discharge at these times. Dr. Burnham, a pathologist, made careful examinations of the conjunctival secretion, but failed to find organisms either by coverslip preparations or in cultures. The recurrence of the eye disturbance at time of operation recalls the insistence of Professor Wright of London to the effect that mechanical interference is apt to be followed by clinical manifestations. Dr. Woods does not know whether or not to consider this case one of metastatic gonorrheal conjunctivitis, but he can find no other explanation. The eye was entirely well in February before and at the time of the injection of gonococcic vaccine.

DR. HERMAN KNAPP, New York, said that this form of metastasis shows itself particularly in the anterior chamber and in the vitreous, so much so that it often frightens the patient. The iritis which comes with the disease is not so intense. It shows itself later and the exudate is different. In these cases there is a good deal of disturbance and the patients are very much frightened. As soon as Dr. Knapp sees a spongy exudate in the vitreous he suspects this condition. It lasts three or four weeks and then the symptoms disappear and the exudate clears up from the anterior chamber. It may have the appearance of a dislocated lens and has been mistaken for that. Dr. Knapp sees this condition occasionally, but is certain that there is no danger to the eye. The diagnosis is characteristic: a sickle on the upper part which enlarges by absorption of the fibrinous exudate. Rarely the exudate contains blood. This exudate is present also in the vitreous. In the grave cases Dr. Knapp said that the physician should not fail to warn the patient and the husband or wife as the case may be.

DR. W. CAMPBELL POSEY, Philadelphia, said that metastatic gonorrheal conjunctivitis has certainly not received the recognition which its frequency deserves. In a paper which he read before the Section on Ophthalmology of the College of Physicians of Philadelphia, in 1906, Dr. Posey reported a case of this nature, and dwelling on its symptomatology, referred to a monograph by J. W. White which was published twenty years ago, in which a comparative table was given showing the distinction between this form of conjunctivitis, or gonorrheal ophthalmia, as it was formerly called, and true gonorrheal conjunctivitis, or conjunctivitis from direct infection. White, who is a syphilographer and genitourinary surgeon of wide experience, said that in from seven to eight hundred gonorrheal cases he had observed but one instance of true gonorrhea conjunctivitis, but that he had noted one of metastatic conjunctivitis in from fifty to sixty cases of the same disease. There can be no question but that conjunctivitis may arise in gonorrheal cases from metastasis, similarly to iritis, scleritis and optic neuritis, and the explanation of this is not difficult when one reflects how often the mucous membrane constitutes an avenue of escape for abnormal and toxic fluids. How often, Dr. Posey asked, do we find that rheumatic and gouty inflammations of the conjunctiva and episcleral tissues, and the eczematous eruptions which occur there are attributable to an autointoxication of gastrointestinal origin? The extensive lymphatic system in this region, and the circulation of fluids through it, doubtless frequently occasions the deposit there of liquids which are more or less laden with toxins, and even with microbes themselves. Cleanliness with astringents, which should be varied in character and strength to meet the varied degrees of inflammation, should be included under the local treatment, and the salicylates, he said, will be found of great service in controlling the toxemia.

DR. S. L. LEDBETTER, Birmingham, Ala., reported a case occurring in a young married woman who applied to a surgeon for treatment for some urethral trouble. She had been subjected to several urethral irrigations and finally, under anesthesia, a portion of the urethra was removed for microscopic examination. The patient did not feel well after that and was given morphin rather regularly. The surgeon was told that she had urethritis—he had been examining for tumor. She went along in this way until the twelfth day, when she developed a conjunctivitis, with considerable redness and injection and a mucopurulent secretion, very slight, not the usual secretion seen in direct contagion. Dr. Ledbetter examined the eye and gave it as his opinion that it was not a case of gonorrhea direct, and on examination found the retina and media in normal condition. He decided that it was a metastatic condition. The woman was in a highly nervous state. Her mental condition grew worse and she died on the twentieth day from the time of the removal of the section of urethra, eight days from the time the ocular symptoms appeared. Two examinations of the conjunctival secretions were made—one showed the gonococcus, the other did not.

DR. JOHN GREEN, JR., St. Louis, said that he had encountered in a woman a case in which, by exclusion, he was unable to arrive at any diagnosis other than metastatic gonorrheal conjunctivitis, possibly associated with dacryoadenitis. F. M., a prostitute, was admitted to the St. Louis Female Hospital with the diagnosis of gonorreal conjunctivitis. The history was as follows: Four months previously she had contracted gonorrhea, which was followed by inflammatory trouble in the right ankle, knee and left elbow joint. The arthritis was accompanied by fever and she was confined to bed for several weeks. In the meantime the vaginal discharge had greatly lessened in amount and finally ceased. Two weeks prior to the onset of the ocular trouble she suffered a second attack of gonorrhea. Two days before entering the hospital she awoke to find her eyes greatly swollen and bloodshot. Ocular examination showed both conjunctivæ chemotic. The discharge was very slight and of a mucoid character. The palpebral conjunctiva was scarcely, if at all, involved. The upper lids were considerably swollen. Palpation in the region of each lachrymal gland revealed an ill-defined swelling, not painful to pressure. Corneæ were intact. Vision = 20/20, each eye. Ophthalmoscopic examination was negative. Smears from the scanty conjunctival secretion on five different occasions revealed no gonococci, although smears from the vaginal discharge showed gonococci in abundance. The treatment consisted solely in the application of cold compresses. Within three days the chemosis had subsided and at the end of a week the eyes were so nearly restored that the patient declined to remain longer in the hospital. It is, of course, possible that a dacryoadenitis was the primary condition and that the conjunctival inflammation was secondary to it.

DR. H. A. ROTHROCK, Westchester, Pa., reported a case of this kind that came under his care several years ago. The patient, a young man, was suffering from a gleet. What impressed Dr. Rothrock most about the case were the small amount of discharge with the marked injection, and the swelling and tenseness of the lids, and the duration of the disease which lasted about three weeks. About a year later three similar cases were reported in one of the French magazines by a Japanese physician. In the case which Dr. Rothrock treated a bacteriologic examination failed to show any gonococci.

DR. JAMES CARROLL, Baltimore, said that in order to rectify what might be a false impression from Dr. Randolph's remarks, he would like to say the bacteriologic examination in the second case, which is the doubtful one in his estimation, was made twice a day so long as there was any conjunctival secretion, namely, for five days. There is a decided difference between the hyperemia of the ciliary region in beginning iritis and the marked injection, swelling and secretion of the conjunctiva in beginning metastatic conjunctivitis. In regard to confusing it with metastatic iritis the following points should

be considered: First, the localization of the inflammation; if the case is seen early the inflammation in metastatic conjunctivitis is localized in the conjunctiva, whereas in metastatic iritis it is the iris; second, the severity of the symptoms in metastatic conjunctivitis is decided less than in metastatic iritis; third, metastases of the joints in metastatic conjunctivitis usually follow the inflammation in the conjunctiva; whereas in metastatic iritis they precede the iritis. So far as Dr. Carroll can find, all the cases reported occurred in the male, most authors finding it difficult to explain this fact.

GALL DUCT OBSTRUCTION BY MOVABLE KIDNEY.

BY DR. M. B. TINKER, ITHACA, N. Y.

(*Concluded from page 126.*)

DISCUSSION.

DR. ROBERT T. MORRIS, New York, said that in cases in which the range of the kidney in the retroperitoneal plane carries it to the fixed point of the duodenum, gastric disturbances are very apt to be a dominant feature, with dilatation of the stomach or a chronic gastritis. He has seen a number of cases in which a loose kidney caused obstruction by direct mechanical pressure on the fixed part of the duodenum. He has not seen pancreatitis as a complication in these cases, although he would expect to see it if a sufficient number of cases had come under his observation. The superior mesenteric veins should be compressed by this range of the kidney, but he has not noted as yet that he has had a greater proportion of cases in which Edebohl's symptom of appendix congestion is associated with a loose kidney. The chief difficulty in making a diagnosis of this fact will be because in so many cases, associated with a loose kidney, there are adhesions about the bile tract causing very much the same symptoms—the gall spider cases. Most physicians have met cobwebs up in the attic of the abdomen due to chronic cholecystitis, dating usually from childhood, with or without symptoms, and most are unaware of the presence of adhesions. These are found in the postmortem room so commonly that they seem to represent almost a normal condition, but in a certain proportion of the cases they cause certain definite symptoms not readily distinguishable from symptoms caused by a kidney which ranges in the retroperitoneal plane toward the fixed part of the duodenum. In making the diagnosis cases with panoptosis must also be eliminated, in which the liver, descending the reverse of the line of ascent in fetal life, has angulated the common bile duct. Dr. Morris has been on various sides of the question of treatment of the gall-bladder, and has tried to base his action on the moral ground of statistical reports, but every man has his own technic and results which are not always to be compared with the statistics of others, and at present Dr. Morris is much in favor of cholecystostomy, preferring now a very simple technic in removing the gall bladder, as a rule, because the gall-bladder once infected is always infected, and by removing it he avoids the adhesions which are so patent in causing obstruction, adhesions to the hepatic flexure of the colon, to the pylorus, or causing angulation of cystic or common ducts. In the technic of fixation of the loose kidney in these cases he uses a combination of the methods of Goelet and Senn. The former quickly hangs the kidney in the desired place by a single suture. This can be done in a moment. The use of gauze, as recommended by Senn, obliterates the pouch behind the peritoneum into which the kidney is likely to range again, unless granulation tissue, followed by the formation of new connective tissue, has closed the pouch. That combination allows one to complete the operation in a very few minutes; seven or eight, or at the most ten minutes, will suffice to do the operation of fixation of the kidney, as a rule. In these cases of obstruction by a loose kidney, Dr. Morris has seen jaundice twice distinctly, and he thinks, in one other case; but usually the cases have been those in which there were more commonly the painful features, the spasm of the muscularis of the duets and the common symptoms of obstruction.

THE ABDOMINAL SYMPTOMS OF THORACIC DISEASE.

BY DR. A. A. JONES, BUFFALO.

(*Concluded from page 128.*)

DISCUSSION.

DR. ALEXANDER LAMBERT, New York, stated that in various consultations the frequency with which abdominal conditions had been diagnosticated when the trouble was in reality angina pectoris has been forcibly impressed on him. The cases in which pneumonia has been mistaken for appendicitis and in which pleurisy has caused acute abdominal pain have been very interesting. So far as his experience goes, when the pain is due either to pleurisy or to pneumonia, there is a short space of time between expiration and inspiration when the abdominal wall relaxes. The muscular rigidity, so characteristic of peritoneal involvement can be caused by pleurisy, but there is a period during which the rigidity is momentarily relaxed, when this differentiation can be made. In true appendiceal attacks there is invariably some point of abdominal tenderness; in pneumonia or pleurisy this tenderness is lacking.

DR. W. S. THAYER, Baltimore, mentioned a case of thoracic disease with certain remarkable abdominal symptoms which he believes worth recording. Last year he saw with Dr. I. E. Atkinson of Baltimore, a man who had been under Dr. Atkinson's care for some years suffering from epilepsy. The patient was 52 years old and had had these attacks for two years at intervals of several months. He was an excessively nervous man, irritable, querulous and difficult, full of fears and fancies. One day he sent for his physician, complaining of excruciating pain in his chest; this began apparently with a sharp pain about opposite the third left intercostal space. When seen he seemed to be suffering greatly, but could not definitely localize the pain. For the following day he was in bed, complaining of pain now at one point, now at another, now in his back, now throughout his chest. He seemed to be in great suffering, but was kept reasonably comfortable by two hypodermic injections of one-fourth grain of morphia. Dr. Thayer saw him on the following day, and again two days later. During, that time he was very irritable and nervous, complaining of the same indefinite pain. He asserted constantly that he was in agony and feared impending death. On careful examination a few crackling rales were heard in the lower left axilla which might have been a slight pleural rub or simply the expansion of the atelectatic lung. On the fourth day there was also noticed a slight dulness at the right base, with enfeeblement of respiration and a slightly nasal character of the voice sounds. The abdomen was slightly distended and a little tender, especially in the region of the appendix. The leucocytes were 18,000. He remained in about the same condition until the morning of the seventh day, when he suddenly collapsed. Dr. Atkinson found the patient with a gray, peritoneal facies; pulse ranging from 120 to 130; abdomen excessively distended; temperature from 101 to 102 F. Dr. Halsted operated shortly afterward. The patient became pulseless and nearly died on the table. On opening the abdomen the colon was found to be enormously distended, so much so that the case was regarded as one of obstruction. No exploration could be made. The colon was opened and the distension immediately relieved. The patient seemed actually to come to life again. The distension of the colon was so great that the peritoneal coat was ruptured at the point exposed. The man died two days after the operation. Necropsy showed a dissecting aneurism beginning at the end of the arch of the aorta. Its onset had caused the intense pain in the chest. It had burrowed downward and there had been some escape of blood into the base of the right pleural cavity, which had accounted for the dulness on percussion and the nasal voice sounds. It had extended through the diaphragm into the region of the celiac axis, resulting in a paralytic ileus. The distension of the colon was so great that the peritoneal coat was torn in several places. The great distension of the colon stopped rather sharply at the splenic flexure without apparent cause. Dr. Thayer mentioned this case because of its remarkable char-

acters and because of the fact that it was, after all, an instance of abdominal symptoms depending primarily on a thoracic change.

DR. W. H. NEILSON, Milwaukee, said that he is especially interested in Dr. Hoover's remarks regarding the points of tenderness because hitherto he has been obliged to wait until the development of symptoms other than those referred to. He has had a number of cases in which the first symptoms are abdominal, some simulating gastritis and some appendicitis. In all the cases, if he waited a few days, thoracic symptoms showed themselves. A few weeks ago he was called in consultation to see a woman with symptoms similar to those described by Dr. Thayer, restlessness, slight elevation of temperature, with trouble of several months' duration, variously diagnosed. He found the heart with a galloping rhythm, pulse unequal at the two wrists, and the patient complained of pain over the sternum, stomach and colon. He could detect no bruit. A diagnosis of aortitis was made. The pain was arrested only by the use of morphin. About three weeks later he was again called in and found the patient in a comatose condition and with hemiplegia.

DR. ALLEN A. JONES, Buffalo, said that the points made by Dr. Hoover are very valuable in certain cases, but there are cases in which they will be lacking. He referred to the points of tenderness along the distribution of the phrenic nerve. The abdominal symptoms are often pronounced in thoracic disease, especially in children. Dr. Jones did not make the same observation as did Dr. Lambert, regarding abdominal rigidity in cases of pneumonia. On the other hand, in his paper Dr. Jones speaks of the flaccid condition of the abdominal walls. Dr. Jones said that Dr. Lambert's statement regarding the period of relaxation of the rectus muscle is of value and he will watch for it in the future. Dr. Jones had referred in his paper to the cases of appendicitis being closely simulated by pneumonia. Dr. Thayer's report illustrated splendidly, he said, the unreliable character of abdominal pain as a symptom. In many cases it is most misleading and keeps one guessing at all sorts of diagnoses. His report is valuable in corroborating what was stated regarding aortic disease occurring with abdominal symptoms.

SYMPOSIUM ON THE TURBINATE.*

(*Concluded from page 138.*)

DISCUSSION.

DR. JOSEPH A. WHITE, Richmond, Va., said that in his article in Burnett's "System of Diseases of the Ear, Nose and Throat" he had called attention to the stuffy and obstructive sensations about the nose resulting from indigestion and also the production of difficult breathing from gastric and intestinal disturbances. The gastrointestinal tract and the nose have, he said, both a direct (by way of the mucosa) and a reflex (by way of the pneumogastric) connection that explains their physiologic and pathologic interdependence one on the other. Dr. White said that gastralgia, indigestion, etc., have been reported as resulting from nasal affections and cured by getting rid of the latter, and that it is, therefore, rational to suppose that the reverse process can take place resulting in impeded nasal circulation, swollen turbinates, irritable pharynx, etc. In gastrointestinal irritation resulting from the presence of uric acid and oxalate of lime, it has been shown that both these substances are eliminated by the skin and by the nasal mucous membrane, causing more or less irritation and pathologic reflexes in the nose. The presence of indican in excess, as stated by Dr. Stucky, is, he believes, always evidence of intestinal fermentation with absorption of toxins and ptomains due to putrefaction of undigested food. In addition to the manifest effects of this process on the circulation in general and on the nasal circulation in particular, the local irritation of the intestinal tract resulting could, he thinks, bring about irritation of the nervous system also, with in many cases, manifestations of nasal symptoms by direct or reflex influence. These manifestations are not only found among the "good livers," but are frequent in young women, many of them working girls, especially seamstresses, milliners, cigarette and packing-box makers and packers of cigars. It is among this class in his community that he has observed most cases of this kind. They all suffer from constipation, with gastrointestinal disturbances, and with the added element of overwork they become as neurotic as the good livers who lead a mental rather than physical existence. While it may be true that the latter class are more liable to these symptoms, they have not a monopoly of them. While agreeing in the main with Dr. Stucky, he differed from him somewhat as to the necessity of local treatment in some of these cases with a tendency to obstruction first of one nostril, then the other, especially at night, the obstructed nostril being on the side they lie on. He usually suggests shrinking of the turbinates with galvano-cautery, properly applied in linear cauterization. In the main, however, simple cleansing of the nasal spaces and treatment directed to the regulation of the digestive process, proper diet and physical exercise will accomplish the desired results.

DR. CAROLUS M. COBB, Boston, said that in a previous paper he had called attention to a peculiar formation of the middle turbinate which was closely associated with progressive deafness. When seen by anterior rhinoscopy the condition presents a well-marked picture. In the first stage the nasal chambers are rather narrow and generally free from signs of disease of the mucous membrane; the nasal chambers as they form the apex of the triangle superiorly are extremely narrow, and the middle turbinate is not at all prominent in front, but does extend downward in its posterior part, often below the inferior turbinate. The prolongation downward of the posterior part of the middle turbinate is often extremely thin on its front edge, but if investigated it will be found that it immediately grows thicker, and if the attempt is made to introduce a probe between it and the septum it will be found that it is very difficult and many times almost impossible. It is generally as closely applied to the other nasal wall. The membrane does not have the appearance of congestion or inflammation in the first stage of the disease, but that part of the nose is thoroughly blocked by the bony enlargement of the middle turbinate. It forms such a tight wedge that it is often difficult and sometimes impossible to introduce the blades of the ethmoid forceps on either side of it when one attempts to remove a portion of it. Dr. Cobb has often been compelled to use a fine saw, introduced on the most accessible side, to make a small opening for the introduction of the forceps. The stage of the disease which is marked by this enlargement of the middle turbinate is closely associated with the beginning and progressive stage of the middle ear disease. Before atrophy takes place he believes that it is possible to arrest the deafness by removing a part of the prolongation of the middle turbinate. Whether this disease is a part of the disease which affects the ears or whether the ear disease is caused by the nasal disease Dr. Cobb is unable to say, but from the fact that an operation on the middle turbinate, before it has reached the stage of atrophy, has a decidedly favorable influence on the ear disease he is inclined to believe that the nasal disease may act as a cause of the aural disease.

DR. JOSEPH GIBB, Philadelphia, said that he thinks the operation of excision of the anterior third of the middle turbinate bone marks a very distinct advance in the treatment of sinus disease. In many cases it is not merely a preliminary to more radical procedures, but is the sole operative measure required, since it furnishes adequate drainage and enables the operator to wash out effectively the affected sinus.

The second indication for the removal of the middle turbinate is to promote drainage and cleasing in certain types of

* This is a general discussion, which took place at Atlantic City in the Section on Laryngology, on all the papers on the turbinate. These papers have appeared as follows:

"Anatomy of the Middle Turbinate, with Special Reference to Its Topographic and Surgical Relations." Hanau W. Loeb, M.D., St. Louis. THE JOURNAL, June 22, 1907, 2008.

"Pathology of the Middle Turbinate." J. L. Goodale, M.D., Boston, THE JOURNAL, June 22, 1907, 2105.

"Non Operative Treatment of the Middle Turbinate." J. A. Stucky, M.D., Lexington, Ky., THE JOURNAL, June 29, 1907, 2174.

"Indications for Resection of the Middle Turbinal." W. E. Casselberry, M.D., Chicago, THE JOURNAL, July 6, 1907, 21.

"Technic of the Operation for Removal of the Middle Turbinate." George L. Richards, M.D., Fall River, Mass., THE JOURNAL, July 13, 1907, 137.

atrophic rhinitis. In his own experience, however, he sees very few cases of atrophic rhinitis in which the disease may be localized in or limited to the ethmoid cells. In those cases of atrophy in which the sinuses are involved the maxillary alone, or with the ethmoid and sphenoid, is about the order in which they have come to his knowledge. And in these it would seem better to resort to more radical measures to effect the removal of the confined inspissated pus and to provide for subsequent drainage and treatment. In the divisions of the subject Dr. Casselberry did not specifically mention hypertrophy as an indication for operation, but, since he refers to numerous conditions the result of pressure which have ever been associated with hypertrophic conditions, I infer that he means the removal of a hypertrophied turbinal for the relief of these conditions.

Perhaps some of the most gratifying successes that have fallen to the lot of the rhinologist is the relief secured in the various so-called neuroses by this simple operation. Leaving out of consideration those cases of sinus disease, a safe guide in determining which cases of reflex neuroses are likely to be relieved by operation is to note the appearance and position of the turbinate.

Dr. Gibb said that one indication for excision of the middle turbinate is that peculiar condition misnamed cyst of the middle turbinate. Whatever the true pathology of this condition may be, there can be no doubt that it constitutes an imperative indication for resection, since by its presence alone it may in a merely mechanical way produce many of the conditions which we all recognize in smaller hypertrophies as constituting indications for resection, to say nothing of the necessity for its removal because of its intrinsic pathologic nature.

DR. CULLEN F. WELTY, San Francisco, said that, because of its anatomic situation, the middle turbinate is responsible for so many nasal affections that it of necessity assumes a very important place. First, to promote drainage and for diagnostic purposes it will yield more good than any single minor operation at our command. In chronic cases all the hypertrophied or polypoid tissue should be removed before attempting the radical operations, as the remaining pathologic tissue will reinfect the cavity that has been thoroughly cleaned. Furthermore, he does not consider the operation through the middle meatus justifiable under any circumstances, because of the anatomic situation. His first conservative operation on the antrum of Highmore is by way of a carious tooth root; his second by way of the inferior meatus. Dr. Welty is more and more convinced that the radical operation is the best procedure generally speaking. Second, to promote drainage in atrophic rhinitis. All cases of one-sided atrophic rhinitis, accompanied by crust formation, should be diagnosed as suppurative in nature. He believes that most of the trouble comes from the ethmoidal labyrinth. At times it may be necessary to remove the whole or part of the middle turbinate for polypi, and this can sometimes be accomplished very satisfactorily by fracturing the middle turbinate from its attachment by the introduction of a Killian speculum within the middle meatus. That part of the middle turbinate that touches the septum or the lateral wall of the nose after cocainization should, he thinks, be removed in all cases of headache, neuralgia, frequent coryza, or a sense of fulness referred to that region. Dr. Welty said the sense of smell is much benefited by operations of the middle turbinate when diseased.

DR. W. L. BALLENGER, Chicago, said that Dr. Mosher had called attention to the fact that the middle turbinate body often is so coapted to the infundibulum or outer wall of the nose as to obscure all the cells that drain into it; the frontal sinus, anterior ethmoidal cells and the antrum of Highmore. Furthermore, sometimes there are cells in the unciform process which enlarge it towards the middle line, and this may lead to obstruction. This certainly is a motive leading us to do the operation. When the middle turbinate body is coapted against the septum its whole length there is obstruction of the cells. As to the technic he thinks Dr. Richards' method is excellent, and he commended him for it and, in addition, offered another method of removal of the middle turbinate, one which seems to him to be under perfect control and easily completed. He has designed two knives, one for use on the right side of the nose and one for use on the left side. This little knife can be inserted under the middle turbinate and engaged at any desired point, then drawn forward, the knife turned upward into the superior meatus. The advantage of the knife is that the middle turbinal can be cut from its attachment with ease and facility. Hence if there is obstruction to the naris, the middle turbinate can be removed so completely that it absolutely dislodges the obstruction to the infundibulum. In addition, it is under easy control both in introducing and removing it through the tissues. The shank of the instrument goes above the middle turbinal, and the blade hangs down into the nose, cutting off the attachment of the middle turbinate. The blade can be inserted at any point to the posterior extremity and all or part of the middle turbinate removed at will. The blade is attached at an angle to the axis of the handle; it hangs down, pointing a little outward, and is drawn forward so as to shave off the attachment of the turbinate and completely uncovers the infundibulum. As Dr. Mosher said, it is important that the middle turbinal is so removed as to uncover absolutely the infundibulum, and he wished to emphasize the point that we should devise instruments to do this with the least laceration of the tissues.

DR. CULLEN F. WELTY, San Francisco, said that cocainization is the all-important procedure in the removal of the anterior half of the middle turbinate. The cocain should be applied by rubbing it into the part to be operated on, preferably a 20 per cent. solution. This rubbing process should continue until the patient says that he does not experience any more pain. By this procedure a minimum amount of cocain is used. Usually it will require three different applications, more often less, than more. In case of hypertrophy or polypoid hypertrophy, he does not consider it necessary to make an incision or bite out tissue prior to the use of the snare. This latter procedure he confines to those cases that do not have pathologic tissue, but produce disturbances from pressure on the septum or the lateral nasal wall. The cold snare is the best instrument, and a small biting forceps for tags of mucous membrane. Dr. Welty does not believe in a tampon for the nose following operation, and particularly so after the removal of a part or the whole of the middle turbinate, for the following reasons: It is unnecessary, uncomfortable and liable to produce infection of the accessory cavities.

DR. ROBERT LEVY, Denver, said that in regard to the after-treatment following operation on the middle turbinate, he is opposed to packing. It is a serious mistake to fill the upper part of the nose with gauze or other dressing. As to the use of elaborate preparations of ointment and other medication, such as Dr. Richards suggests, he does not see the necessity for it, if the nose is kept clean after an operation. There rarely is severe bleeding from the middle turbinate. Should secondary hemorrhage occur, it is then time enough to pack which should be done purely for the purpose of stopping hemorrhage. The packing should only remain long enough to accomplish this purpose and then be removed. Free drainage is thus permitted, the patient being instructed to breathe through the nose. If there is any danger of infection in intranasal operations, as unquestionably there is, this danger is less when the nose is left free.

DR. CHRISTIAN R. HOLMES, Cincinnati, said that he had been very much interested in the question of whether the intranasal operation made a short time before the external operation is really attended by the dangers pointed out. He had frequently made the intranasal operation, and in a week or ten days done the external operation. But a short time ago he had a fatal case, which has made him think a little more seriously on the subject. This was a case of fibroma involving the accessory sinuses on the right side, and in order to ascertain the character of the growth he made an excision of a fragment of the growth in the right naris to get a piece for examination. A fistulous opening discharged pus very freely near the inner canthus. There was a tumor and a chronic empyema of the accessory sinuses. A careful examination of the piece removed failed to develop anything sinister, yet after a radical operation, which involved, of course, a very

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extensive opening of the sinuses, on the second day the man developed a high fever and then active symptoms of pyemia, and he died a week afterward. Dr. Holmes has been wondering whether or not the germs stimulated by this first operation were at fault. We should bear in mind the fact that although the germs in the nose may be practically harmless in a particular individual, let an operation be done and they will take on new activity, and during that period of fresh activity there is danger in making a fresh wound.

He has had one interesting case of the suprarenal habit, acquired from using it extensively in hay fever. This young lady formed the habit so strongly that it was necessary for her to take the spray with her when she went to a party, and every hour or so she had to go up stairs and spray her nose. There was no occasion for it except the habit she had formed. He had to take her into his hospital and keep her there several weeks in order to break the habit. Dr. Holmes decidedly objects to packing. He never packs until hemorrhage comes.

He has had trouble with the sphenoid opening. The difficulty was he never opened extensively enough. Last year in Berlin he got an instrument that cuts away the whole front wall with the greatest ease, opening the sphenoid cavity. It is now his habit, if he opens the sphenoid cavity at all, to cut away all of the wall that he can.

As to ozena or atrophic rhinitis, he is not a believer in the theory that it is a disease sui generis. If you find the sinuses at fault, open thoroughly and drain and you will have cured the trouble.

DR. B. A. RANDALL, Philadelphia, said that he would like to emphasize what has been said as to the simplicity of operation in these cases and to commend an aneurism needle, which he often uses in otologic cases of jugular ligation. This instrument is capable of loosening the attachments of the turbinal in many cases, as well as does the instrument devised by Dr. Ballenger. It is one of the best instruments for freeing the tonsil and opening quinsy abscesses. It is a simple, easy instrument to employ, can do little damage, and is in many ways valuable. He believes the scissors, particularly those of Dr. Holmes', constitute the best instrument for detaching the forward part of the turbinal, if used as Dr. Holmes has advocated. Laid flat against the external side of the nose they reach the turbinal at its insertion, and it is easier cutting through at this point than as advocated by Dr. Richards.

In regard to the cases that are simple and capable of resolution, he believes that in the reduction of the milder hyperˈtrophies, or intumescent stages, we have no better medication than mild chlorid. Simple calomel insufflation serves as a protective in so far as it is insoluble; as an antiseptic as it is converted into bichlorid; and as an alterative in its absorption. As an alterative he believes it to be of value and it should hold a place which has not been taken from it by iodoform or any of its substitutes. Dr. Randall always uses it and will continue to do so until something more valuable is offered.

DR. N. L. WILSON, Elizabeth, N. J., said that it was his pleasure, about eleven years ago, to hear Bosworth speak in the New York Academy of Medicine. Bosworth looked on operations on the turbinate bodies with great horror, and never touched them with cutting instruments. A few years later, in London, he saw Wokes rip out the middle turbinate body with his spoke shave. This made him appreciate Bosworth's saying that the turbinate bodies must be treated just as any other mucous membrane. We must now strike a happy medium. There are conditions in which the turbinate body must be, at least partially, removed. To say that we shall operate by Miles' method or Holmes' method, or Richards' method, is, to his mind, nonsense. In other words, we must select the operation for the individual case. Recently he had used a drill; there are a few cases in which this answers well. He drills through the anterior portion of the turbinate body, leaving the mucous membrane intact, and brings the surfaces together by Yankauer's method of stitching, thus shrinking the turbinate, and getting drainage behind the body, yet preserving enough of the turbinate body to functionate.

DR. H. W. LOEB, St. Louis, said that he wished to say a word with reference to the importance of the after-treatment in these operations. The adrenalin-chlorin solution is used after the cocainization is completed. The adrenalin solution is applied in a strength of 1 to 1,000, and being kept in contact with the parts operated on for a short time the operation is bloodless. He always packs with gauze more or less tightly, removing it after three to five hours. The gauze is necessary because in two hours there is reaction on the part of the adrenalin so that the tendency to hemorrhage is increased, unless a clot be tightly formed. But in three hours the reactive effect is over, so that the gauze may be removed and the patient's nose permitted to bleed without the application of anything, except perhaps hydrogen peroxid. Dr. Loeb advocates the use of a packing to be removed in a few hours; if it remains longer there is liability to infection and severe pain, and perhaps that is why Dr. Richards finds it necessary to use morphin.

DR. ALLEN B. THRASHER, Cincinnati, said that it struck him while listening to the anatomic papers, that Nature has gone to a great deal of trouble to hide away the mouths of the openings of these sinuses under the turbinates, and he thinks there must have been some reason for doing this. That reason, it seems to him, is for the preservation of the sinuses, to prevent the easy entrance into these sinuses of different foreign bodies, whether chemical, mechanical or biologic. Of course, should these sinuses be occluded by pressure of the middle turbinal, then it would be rational to resect this body. The method we take to remove it is not of such importance as the result obtained; whether it be the method presented by Dr. Richards, or whether we use the Holmes scissors for the purpose of detaching the middle turbinal from its attachments, or whether we use the forceps. It seems to him that instead of using this or that method we should select for each patient that which is best adapted for the removal of the turbinal from that individual, and only operate in cases fitted for operation. Dr. Thrasher asked Dr. Casselberry if the beautiful scheme he presented of atrophic rhinitis is not made up of a whole lot of cases rather than one occurring in a single individual? He could not imagine that atrophic rhinitis was ever caused by anything of the kind. He confessed that he was not convinced that atrophic rhinitis is always caused from sinusitis, as he has seen a number of cases in which there was apparently no sinusitis. It seems to him they should go to a neurologist rather than a surgeon of the nasal cavities; that the condition is rather an atrophic one due to some neuritis, or, possibly, neurosis, which prevents the proper blood supply, or proper innervation of these parts, with resulting shrinkage.

DR. JOSEPH C. BECK, Chicago, said that last February he presented a number of skiagraphs in Cleveland showing the relation between atrophy and sinus disease, and Dr. Coakley also had a number of skiagraphs to show the rôle sinus disease played in relation to atrophic rhinitis. In almost all of the plates affection of the sinuses were found; that is, sinuses with thick walls, and it was concluded that there must be a distinct relationship between sinusitis and atrophic rhinitis. Postmortem examinations did not show any involvement of the sinuses in atrophic rhinitis, but Dr. Coakley suggested that these cases of atrophic rhinitis have congenital malformation or malnutrition of the parts, the sinuses are small, and that is why the Roentgen rays show an involvement. Dr. Beck has operated on a number of atrophic cases in removing the middle turbinate, and he believes the results are due to the stimulation, or reaction established in the nasal cavity, thereby improving the condition. He practices Dr. Richard's method of operating, except that he uses the Holmes scissors with great satisfaction, and always puts the patient to bed over night. He objects to packing, as he believes it to be injurious.

DR. JOSEPH L. GOODALE, Boston, said that one point referred to by two of the speakers was the undesirability of an operation following soon after a previous operation in sinusitis. It seems to him that an important matter was overlooked; in an individual who is a victim of chronic sinusitis there is, in his sinuses, a growth of streptococci or cocci of various sorts, which is harmless to him, but if an active in-

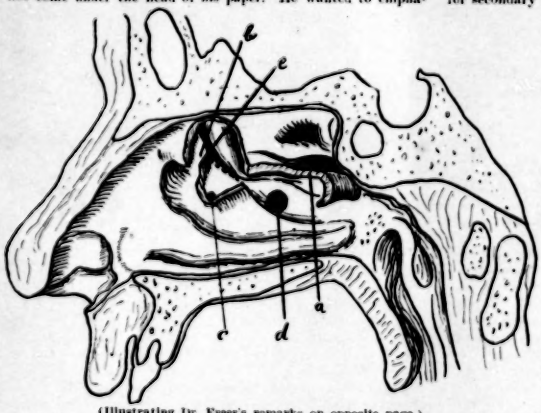
flammation is set up the virulence of these cocci is very greatly enhanced, and if there is an incision or wound of the bone or skin in the vicinity this increased virulence will enable the micro-organisms to penetrate deeply and give rise to erysipelas, phlegmon or osteomyelitis. With regard to packing, he did not see any object in it; it seems to him there is greater advantage to be obtained from securing an aseptic blood clot in the parts. But dusting antiseptic powders on the mucous membrane is harmful. If a sufficient amount of powder is put on the mucous membrane to sterilize the parts, enough antiseptic to kill any organisms growing there, the natural process of repair will be hindered.

DR. DUNBAR ROY, Atlanta, Ga., said that three years ago he gave up packing entirely. At that time he used a method Dr. Pischel of San Francisco was instituting: After the removal of the middle turbinate and cleaning the cavity of blood clots, to smear thoroughly over the parts that had been cut, with collodion, and dust with powder. In his last fifty cases he has used this method entirely, no packing, nothing but collodion and dusting with aristol powder. He has had very little bleeding, and never any secondary hemorrhage; no trouble whatever was experienced with a patient bleeding several hours or even a day after operation.

DR. JOSEPH A. STUCKY, Lexington, Ky., said that the treatment suggested by Dr. White is surgical and therefore does not come under the head of his paper. He wanted to emphasize what Dr. Casselberry said about the relation of the middle turbinate to atrophic rhinitis. In the majority of the cases he has observed the sinuses are the cause of the atrophic condition, and removal of a half to two-thirds of the middle turbinate gives the most satisfactory results. There is an objection to the biting forceps and the use of the snare in two parts and two places, instead of making a clean-cut incision, as made by the scissors invented by Dr. Holmes. Unfortunately, the average scissors that go under the name of Holmes' scissors are not properly made; they are too large, take up too much space and obstruct the view. He has found in the method suggested by Dr. Richards, which is practically the Myles method, that where so much of the turbinate is crushed off with the snare, where a clean-cut incision is not made, there frequently follows a necrosing osteitis and a sore nose for several days or a week or two afterward. Whereas if the snare is used only for cutting off the patulous mucous membrane, after using the scissors, that danger is not incurred.

Replying to Dr. Freer's remarks about lithemia, he does not think the word "lithemic naso-pharyngitis" is the correct term. He does not know what to call it, but does not believe much in the uric acid diathesis. Uric acid plays very little part, he thinks, in the condition, but he believes there is much in a faulty metabolism found in the intestinal canal. It is up to some one else to tell us what that is and explain it. Dr. Stucky was surprised at the objections made to an intranasal operation just prior to doing an external operation. In some twenty modified Killian operations it has been his rule to remove the middle turbinate at least a day or two before doing the external operation. He thinks the danger that has followed has been the one referred to by Dr. Holmes and Dr. Myles, that we have been too radical with the external operation. We have gone just a little too far back and injured the cribriform plate in a way we did not intend.

DR. THEODORE CORWIN, Newark, N. J., said that in regard to packing it has never been satisfactory and he gave it up entirely long ago. He spoke of the use of a remedy that was introduced to the profession for the treatment of hemorrhage in general, that is, the chlorid of calcium, introduced by Professor Wright of England. It has been found of material service after all kinds of surgical procedures, for the prevention and relief of hemorrhage. Dr. Corwin has used it for seven or eight years in all surgical work in the nose and throat with great advantage and relief from attending the patient for secondary bleeding. The method of administration in these nasal cases is to give 30 to 40 grains to the patient at the conclusion of the operation. In operating on the tonsils he gives the remedy in smaller doses three times a day for three days preceding operation. But for all middle turbinate work it is amply sufficient to give a pretty good dose at the time of operation.



(Illustrating DR. FREER'S remarks on opposite page.)

View of external wall of the nasal fossa. The middle turbinated body has been removed, showing its cut attachment arching upward in front to form the recessus frontalis; b, is the uncinate process of the ethmoid bone from which a v-shaped piece has been excised to show the portion of the infundibulum underneath it and the normal opening of the antrum of Highmore, c; d, accessory opening of the antrum; e, upper portion of infundibulum into which naso-frontal duct of frontal sinus opens.

DR. W. E. CASSELBERRY, Chicago, said that he did not say the bulla was always responsible for the bifid condition of the middle turbinate, but in the particular case that was represented in that drawing. He agreed that the unciform process, the lower lobes of the hyoides semilunaris, is often enlarged, and that it may also produce an appearance of a bifid middle turbinate. In the two cases illustrated it was the bulla, and he punctured that bulla and removed its floor and satisfied himself that it was the bulla.

Dr. Cobb does not find many cases in which there is a focal suppuration in the sinuses where there is atrophy. In the text of the article he will find it said that in Dr. Casselberry's opinion in this class of cases, there was once a focal suppuration, and that this suppuration has later become diffused over the general surface. This also answers Dr. Beck's remarks that at postmortem pus is not found in the sinuses. Dr. Casselberry did not, in all of these cases, find actual pus in the ethmoidal sinuses, but he found desiccated secretion of a semipurulent nature decomposing there, and, by giving it free exit, alleviated the condition. That is all he can say and all the text of the paper maintains. The question of Dr. Thrasher is also answered in the text. The plausible scheme, as he called it, does not purport to be a single case in which all these different stages would be observed. That is manifestly impossible. We have to get information as best we can and put it together piece by piece, and that is what was done.

Concerning the operative technic: In 1891, when first he advocated resection of the middle turbinal, he made a curved scissors with serrated blades. He has found it in his hands better for the purpose for which it is made than other scissors. Usually with this instrument, one bite instead of two, will suffice.

As regards the hospital: In the text it is stated that few were hospital cases; most of them were office patients of the better class. He does not think it necessary to go to a hospital as a rule.

DR. O. T. FREER, Chicago, said that the apparently bifid aspect of the middle turbinated body occasionally seen, is explained by Dr. Casselberry as due to the projection of a bulging bulla ethmoidalis into the field of vision, external to and beside the middle turbinal in the middle meatus. A prominent bulla ethmoidalis can undoubtedly create the appearance of a double turbinate referred to, in cases where a large bulla extends well forward under a thin middle turbinal that lies unusually far away from the external wall of the nasal fossa so that it leaves the bulla uncovered to an uncommon degree. In the great majority of cases, however, it is his experience that the bifid aspect of the middle turbinate is due rather to a swelling of the mucous coverings of the uncinate process of the ethmoid bone than to a projection forward and consequent visibility of the bulla. Dr. Freer referred to a drawing (see opposite page) which shows the parts underneath the middle turbinated body. The latter is supposed to be cut away to its attachment, showing the arching upward of the latter toward the frontal sinus, creating a pocket or prolongation of the space under the turbinate in this direction called by Killian the recessus frontalis. The uncinate process (b) is seen to be the foremost structure underneath the middle turbinate, and when swollen it exactly simulates a second middle turbinal lying close against and external to the real one. Behind and external to the uncinate process, bounded by it in front and the bulla ethmoidalis behind, lies the deep groove called the infundibulum or hiatus semilunaris into which the ductus nasofrontalis, the outlets of the antrum of Highmore and of the anterior ethmoidal cells commonly open. Some confusion exists, as he had noticed in discussions, as to whether the terms hiatus semilunaris and infundibulum are synonyms or whether they describe different structures. They are names for one and the same thing, hiatus semilunaris being the term used by Zuckerkandl, and infundibulum ethmoidale being the name adopted by the anatomic commission.

Society Proceedings

COMING MEETINGS.

Minnesota State Medical Association, Duluth, August 13.
Wisconsin State Medical Society, Superior, August 20-22.
Ohio State Medical Association, Cedar Point, August 28.

NEW HAMPSHIRE MEDICAL SOCIETY.

One Hundred and Sixteenth Annual Meeting held at Concord, May 16-17, 1907.

The President, DR. IRA J. PROUTY, of Keene, in the Chair.

The number of papers was limited to twelve in order that there might be more time for discussion. The result was most gratifying, an unusually large number participating in the discussions, which were full and free.

The Three Long Continued Fevers of New England.

DR. RICHARD C. CABOT, Boston, said, in part: It has impressed itself on me that there are but three long, common, continued fevers of New England, also that there are some of the profession who do not realize that there are but three. As long as that is so, and as long as the facts show that considerably over 90 per cent. of all long-continued fevers do belong to one of three, it seemed to be worth while to emphasize that point, to insist on those three fevers and to speak of their diagnosis. I mean by "long fever" a fever which lasts two weeks or more. A continued fever, of course, is a fever which does not touch normal at any time during 24 hours, and by fever itself—going simply by temperature measurements—any disease in which the temperature is continuously above 99 F. Statistics show that there are but three long-continued fevers of New England—typhoid, tuberculosis, sepsis. The clinical records and postmortem examinations of the Massachusetts General Hospital show that 97 per cent. of all cases in which there was a fever of more than two weeks turned out to be typhoid, tuberculosis or sepsis. Out of 784 cases which I studied for this purpose there were 586 cases of typhoid. Sepsis followed with 70 cases, or 9 per cent. Next to these three causes, come the minor affections. The commonest is meningitis. Although it often has a fever which touches normal, it may have a continued fever; and 27 of these cases were cases of cerebrospinal meningitis. Influenza came next with 10 cases. Acute articular rheumatism followed with 10 cases. Then came 5 cases of leukemia and 4 cases of malignant abscess with fever; then cirrhosis and gonorrhea, two cases each; and then a number of other diseases.

In the diagnosis of these fevers, the first and most important thing to realize is that there is no such thing as simple continued fever, or slow fever, or low fever and gastric fever. Among those seen in consultation, a considerable number have been diagnosed as some one of these things.

Another important fact is that, aside from cases brought in from the tropics, there are no malarial fevers in New England which run a continuous course. They are all intermittent fevers which yield readily to quinin. There are no long-continued fevers due to hysteria, neurasthenia or any other affection of the mind, and none due to constipation. Mistakes are often made in this matter by paying too much attention to the symptoms and not enough to the signs; too much attention to what the patient says and not enough to what we find on examination. Many mistakes can be avoided by an examination of the blood. In examining for tuberculosis, one of the surest ways of stirring up rales is to make the patient take in full breath; let it all out, and then cough at the very end. It still needs to be said that typhoid fever in the majority of cases presents the picture of a patient who has fever and nothing to show for it. Typhoid is not a disease of the intestines at all, any more than diphtheria is a disease of the throat. It is a disease which has lesions in the intestines but in which bacteria are circulating through every organ in the body. The blood test is most important.

DR. WM. T. SMITH, Hanover, expressed the wish that Dr. Cabot's suggestions might be incorporated in the text-books, also that physicians might have, free of charge, blood examinations done by the state laboratory.

Lead Poisoning from Drinking Water.

DR. C. E. BUTTERFIELD, Suncook, emphasized the importance of careful diagnosis, the symptoms being so easily attributable to some other disease.

Tarsal Injuries.

DR. JOHN G. W. KNOWLTON, Exeter, strongly urged examination by the Roentgen ray in all cases of obscure fracture. Continued tenderness in connection with injuries to the ankle is an indication of great injury to the bones rather than to the ligaments. Examination under an anesthetic will tell little, if anything, about the condition.

DR. CHARLES R. WALKER, Concord, strongly advised the use of the Roentgen ray in any injury of the ankle joint, as did also DR. C. WILKINS, Manchester, DRS. FRED B. LUND and JOHN C. MUNRO, Boston.

Brain Abscess.

DR. F. E. KITTREDGE, Nashua, described some cases that had come under his observation. In his opinion many of these cases are largely due to ear infections following grip, and can be avoided by prompt evacuation of the middle ear abscess. It is in the delayed cases of middle ear abscess that we usually get the most serious complications.

DR. FRED B. LUND, Boston, said that occasionally brain abscesses arise without any suppuration in the bones of the ear or any suppuration of the bones of the skull to guide us. In these cases the symptoms are very similar to those of tumor of the brain and are very likely to go unrecognized. Symptoms of brain tumor show an operative condition.

End Results in Benign Lesions of the Stomach, Surgically Treated.

DR. JOHN C. MUNRO, Boston, gave an analysis of 150 benign stomach lesions. In his opinion, the simpler the technic and the closer it follows anatomic lines, the better the result. He had attained almost complete success with the Roux operation, modified by making both anastomoses with the clamp and suture. Almost any form of anastomosis will cure many cases of gross lesion. Excision of the ulcer-bearing area, which is also the cancer area to a great extent, would be the ideal process in all suspicious cases beyond middle life. The simplicity, cleanliness, rapidity and safety of the clamp and suture operation are strong arguments at the present time against any substitutes. Ether, given intelligently and in minimum doses, closure of the omental bursa against hernia, and the elevated head position after operation, assist in reducing the danger of the operation *per se* to a minimum.

DR. GEORGE GAY, Boston, described several cases of persons who had starved to death with benign ulcers, who, he felt sure, could have been saved and their lives prolonged, if they could have had Dr. Munro's services.

DR. FRED LUND, Boston, considered the operation of gastroenterostomy a very safe and simple procedure, providing adequate drainage for the stomach. It will relieve ordinary chronic ulcers near the pylorus also. Excision of the ulcer is a more difficult and dangerous procedure, and should only be attempted after failure of the gastroenterostomy to relieve such an ulcer.

Gastritis.

DR. LEE V. KNAPP, Danbury, described the symptoms and treatment of simple acute, simple chronic, and atrophic gastritis.

The Medicolegal Side of a Physician's Life.

DR. GEORGE W. HAZELTON, Haverhill, believes that medical men, as a rule, look too lightly on the legal side of their profession. They should become familiar with the laws relating to malpractice as a protection to themselves. The line of cases that leads to the most lawsuits is that of fractures, because the results are so rarely perfect. Another frequent cause of these suits is ill-advised remarks by other physicians than the one who attended the case. We should be very guarded in our criticisms of the treatment given by our brother physicians, for we may find later that we did not possess all the facts in the case. The absurdity of the medical expert system is frequently demonstrated. It would seem that justice would be promoted by legislation establishing a permanent board of inquiry, whose judgment should be final, or by enabling the Court to appoint a commission to determine the question of malpractice, leaving the jury or other trier of the fact to determine the amount of damage in dollars and cents, in case the commission finds that there has been malpractice.

DR J. M. GILE, Hanover, said that in his opinion a large number of suits for malpractice are the result of a failure on the part of the physician to take the patient into his confidence in regard to many features of his case. He believed it to be better always to fight a suit for malpractice where there is any reasonable likelihood of winning it.

DR. E. C. CROSSMAN, Lisbon, believed it was always wise to call in a second physician in a case of fracture, no matter how trivial it might seem to be.

Some Personal Experiences in Abdominal Surgery.

DR. A. C. HEFFENGER, Portsmouth, considered the use of salt solution to be a great aid in abdominal operations, diminishing the mortality rate and postoperative suffering, and hastening recovery. It is good surgery in all sections with immediate closure of the wound, to leave a quart or more of salt solution in the abdomen, for it certainly prevents sepsis, and through its rapid absorption increases the blood volume, diminishes shock and alleviates thirst. Effective hemostasis, with sterile and absorbable suture material, has lowered the mortality rate in the graver operations from fifty to five per cent.

DR. D. W. PARKER, Manchester, said that he did not place salt solution in the abdomen as a routine measure, and found that his patients got along better if the intestines were disturbed just as little as possible during the operation.

DR. J. M. GILE, Hanover, doubted if the use of saline solution led to fewer adhesions.

DR. JOHN C. MUNRO, Boston, said he rarely uses the salt solution now. He believed that where there is sepsis in one part of the abdomen, the irrigation immediately scatters the infection over the whole cavity. The less the intestines are handled, the less trouble one is likely to have afterward.

Neurasthenia of School Children.

DR. LOUIS W. FLANDERS, Dover, deplored the constantly increasing demand on the intellectual capacity of the child which, instead of former coarser ills, is subjecting him to the more insidious derangements which result from an overtaxed nervous system. If the present pace is continued, we may have a generation of nervous invalids ahead of us. The doctor said that in his opinion children should not be sent to school before the age of seven; that there should be separate rooms for recitation and study; that the examination of the eyes of all children at least once a year should be compulsory; that a more elastic curriculum for pupils in feeble health should be provided; that a most careful study of the child should be made by both parents and teachers to see that no more mental work is required of him than he can endure without detriment to his health. Better a generation of healthy fools than a race of wise invalids.

DR. A. NOEL SMITH, advocated the systematic examination of all school children by physicians so as to prevent as far as possible, infectious diseases.

DR. EMDON FRITZ, Manchester, said that in his opinion the various nervous depressions from which tired school children suffer are most frequently caused by uncorrected errors of refraction or unbalance of the ocular muscles.

Spina Bifida.

DR. G. B. MOREY, Manchester, reported a case of this kind.

Anesthetization.

DR. A. W. ABBOTT, Laconia, reviewed the history of anesthesia and described different methods of anesthetization.

Medical Defense Fund.

The House of Delegates voted to appoint the following committee to consider the question of medical defense fund, to report at the next meeting: Dr. Ira J. Prouty, Keene; Dr. J. M. Gile, Hanover; Dr. F. A. Stillings, Concord; Dr. John H. Neal, Rochester; Dr. G. D. Towne, Manchester.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. John H. Neal, Rochester; Vice-President, Dr. J. M. Gile, Hanover; Secretary, Dr. D. E. Sullivan; Treasurer, Dr. D. M. Currier; members of council, five years, Dr. John Z. Shedd, North Conway; Dr. F. W. Evans, Coos; trustee, three years, Dr. John W. Parsons, Portsmouth; delegate to American Medical Association for two years, Dr. Wm. T. Smith, Hanover; alternate, Dr. F. A. Stillings, Concord.

The next meeting will be held at Concord, May 14-15, 1908.

MAINE MEDICAL ASSOCIATION.

Fifty-fifth Annual Meeting, held at Lewiston, June 12-14, 1907.

The President, DR. C. E. WILLIAMS, of Auburn, in the Chair.

The following officers were elected for the ensuing year: President, Dr. B. B. Foster, Portland; vice-presidents, Drs. A. D. Sawyer, Fort Fairfield, and C. S. Davies, Augusta; secretary, Dr. W. L. Tobie, Portland; treasurer, Dr. A. S. Gilson, Portland.

Bangor was selected for the meeting in 1908.

The meeting was well attended, over 200 physicians having registered and many interesting and valuable papers were read, which elicited considerable discussion. Dr. W. T. Councilman, Harvard University, delivered the annual oration, discussing tumors.

In accordance with suggestions made by Dr. Williams, in his presidential address, a committee was appointed to consider means for remedying the abuses of public charities and to report at the next meeting.

The subject of the reorganization of the association on the plans outlined by the American Medical Association was discussed at great length, and a committee was appointed, consisting of one member from each county society, to be appointed by the chair. This committee will take the matter of reorganization under advisement, consulting with the physicians in the state, and will report at the next annual meeting.

MICHIGAN STATE MEDICAL SOCIETY.

Forty-Second Annual Meeting, held at Saginaw, May 15 and 16, 1907.

(*Concluded from page 72.*)

Rupture of the Bladder.

DR. H. O. WALKER, Detroit, reported four cases of intraperitoneal rupture of the urinary bladder. Three were fatal, one after operation; one, after suture with fine silk, drainage and use of silver catheter, recovered. Alcohol was regarded as an etiologic factor because it predisposes to distension of the bladder and to trauma.

DISCUSSION.

DR. J. A. KING, Manistee, reported a case of spontaneous rupture of the bladder from gangrene of the penis and urinary retention.

DR. F. B. TIBBALS, Detroit, spoke in favor of prompt surgical exploration in cases of obscure trauma of the abdomen.

DR. A. W. HORNBOGEN, Marquette, suggested that no anodyne be given patients with abdominal lesions, who refused operation, thus forcing them to consent to the needed operative treatment.

DR. F. W. ROBBINS, Detroit, said that rupture of the bladder was consistent with the retention in the bladder of even a large amount of urine.

DR. G. C. HAFFORD, Albion, reported a case of rupture of the bladder from a high dive. Operation at the end of a week, until which time operation had been refused, was followed by death.

DR. H. O. WALKER, Detroit, said that hematuria did not always indicate rupture. In obscure cases abdominal section should be performed for diagnosis as well as treatment.

Perforation of Small Intestine.

DR. W. T. S. GREGG, Calumet, reported a case of obscure origin successfully treated by resection and end-to-end anastomosis by the Murphy button.

DISCUSSION.

DR. H. C. WYMAN, Detroit, spoke in favor of anticipating perforation in typhoid or other lesions by enterostomy.

DR. J. A. KING, Manistee, reported a case of rupture of the intestine from a heavy blow by a plank. There was no surface indication.

DR. F. E. PARKINSON, Saginaw, reported the case of a child that had been hurt and complained only of his ankle; the patient died of intestinal perforation.

DR. F. W. ROBBINS, Detroit, emphasized that rupture can occur without pain.

DR. WILLIAM FULLER, Grand Rapids, reported a case of perforation of the intestine after reduction of a hernia.

DR. H. O. WALKER, Detroit, said that he thought the sinus in the case reported by the writer might be due to the Murphy button free in the abdomen.

Two Common Orthopedic Causes of Sciatica.

DR. W. E. BLODGETT, Detroit, said that sciatica is a symptom, not a disease, and that neuritis, if present, is usually secondary to the underlying cause. Two common causes of chronic sciatica are hypertrophic arthritis of the lower spine, and relaxation and sprain of a sacroiliac joint. A sign of the former is stiffness of the lower spine more marked in flexion toward one side than toward the other. Signs of the latter are tenderness over the sacroiliac joint, pain in the corresponding sciatic nerve, which passes close to the joint, and limitation of motion of the spine when the motions involve the pelvic articulation, as in standing, but less limitation of spinal motion when the patient sits and the pelvis is steadied by the operator's hands. Diagnosis of either condition depends on and needs their assistance and support in furthering the good work and they, on their part, miss much from the lack of thorough exclusion of other possible causes of the sciatica, and prompt improvement by appropriate treatment. The principle of treatment of each condition is protection; in the case of the spine, by a low corset or stiff jacket; in the case of the sacroiliac joint, by lateral compression of the pelvis just below the great trochanters, as by adhesive plaster strapping around the sides and back of the pelvis.

Surgical Cases Presenting Unusual Points of Interest.

DR. C. B. G. DE NANCREDE, Ann Arbor, reported a case of fistula in ano in an infant less than one year old; three cases of actinomycosis, resembling sarcoma, difficult to identify by microscopic findings, and treated in addition to operative means by massive doses of iodids; a case of hemophilia complicating an operation for appendicitis, and a case of hypernephroma.

Surgical Anatomy of the Female Pelvis.

DR. WILLIAM FULLER, Grand Rapids, stated that the round ligament divides into two parts, the smaller part passing in front of the uterus. The ligament, therefore, can be used to correct anterior as well as posterior displacement. A pyosalpinx can be readily drained by incision through Hesselbach's triangle and finger dissection between the layers of the broad ligament.

DR. JOHN N. BELL, Detroit, said that the vaginal route for draining a tubal abscess was preferable to the route proposed by the author, because the latter way did not drain the most dependent part of the abscess.

DR. FULLER replied that drainage through Hesselbach's triangle had given him good clinical results.

Ocular Symptoms of Nasal Origin.

DR. O. A. GRIFFIN, Ann Arbor, said that in all cases of ocular symptoms the nose and adjunct sinuses should be examined. The patient should be asked if he has recently had a cold in the head.

DR. W. R. PARKER, Detroit, said that in epiphora the eye itself should be forgotten and attention centered on the nose.

Relation of Eye Diseases to General Medicine.

DR. E. J. BERNSTEIN, Kalamazoo, said that expert examination of eyes that were producing no marked symptoms sometimes gave the earliest indication of general diseases, such as tabes, nephritis, syphilis and arteriosclerosis.

Vaccine Treatment in Surgery.

DR. W. P. HUTCHINGS, Detroit, has found that a large initial injection produces after the negative phase a very marked rise in the opsonic index, but that this elevation can not be maintained. He gets better clinical results by small doses, beginning with 50 mm., thus avoiding a negative phase, and maintaining a slightly elevated index. He gets better results from doses of 1/4000 to 1/2000 mm. T.R. than by the ordinary larger doses. He has treated by vaccination several cases of acute gonorrhea with prompt relief.

DISCUSSION.

DR. A. W. CRANE, Kalamazoo, described a method of mixing the patient's blood with a standardized bacterial emulsion, and making comparative determinations, thus avoiding comparison with normal blood, and much simplifying the process.

DR. H. R. VARNEY, Detroit, reported a number of chronic dermatologic cases successfully treated by bacterial therapy.

DR. F. W. ROBBINS, Detroit, said that two cases of gonorrheal arthritis treated one with and the other without bacterial injections did equally well. The patient who had received the bacterial injections had a high pulse and a tremor.

Dr. E. M. Houghton, Detroit, said that the great need was for uniformity in methods, so that results would be comparable.

Dr. Hutchings replied that a method similar to Dr. Crane's had been published by Wright several years ago, and abandoned by him on account of inaccuracy. He had not observed general depression after injections.

Tuberculous Adenitis with Special Reference to Cervical Lymphatics.

Dr. J. A. Attridge, Detroit, advocated complete and early removal of tuberculous cervical lymph nodes as soon as the diagnosis of tuberculosis of the nodes was made. Removal of the tonsils and adenoids is desirable, and microscopic examination of these structures often establishes the diagnosis of tuberculosis. A half to a quarter of the cases of unremoved tuberculous glands develop metastases. After excision patients should always be instructed with reference to antituberculous living.

Menorrhagia and Metrorrhagia.

Dr. W. P. Manton, Detroit, said that in seeking for the cause of the hemorrhage he uses the following scheme: 1. Uterine causes: Unsuspected pregnancy, threatened abortion, low implantation of the placenta; metritis; endometritis; erosions of the os; displacement; polypi; fibroids; degeneration of the uterine blood vessels; malignancy. 2. Diseases of near and remote organs: Adnexal diseases; pathologic conditions of ovaries and tubes, broad ligament, pelvic fascia and vessels, intestines, heart, lungs, liver, kidney and other abdominal viscera. 3. Constitutional disorders: Anemia; plethora; tuberculosis; eruptive and other fevers; disorders of the nervous system (menopause, shock, fright, psychic disturbances). 4. Habits of life: Excessive venery; indolence; obesity; gormandizing; alcoholic excess; change of climate; change of occupation.

Amenorrhea.

Dr. R. R. Smith, Grand Rapids, said that deflection of the uterine canal is not a cause of amenorrhea, hence it is wrong to interfere, with the object of straightening. Lack of development is a very rare cause. Age of beginning of menstruation is by no means definite; primitive people menstruate early. Later development of this function is characteristic of higher races. Our knowledge of constitutional causes is imperfect. Change in mode of living is a frequent cause, as instanced in nurses, immigrants, change of residence from country to city. Certain occupations are often associated with amenorrhea; school teachers and mental workers are examples. The most common causes are disturbances in nutrition. Certain diseases cause it, as tuberculosis, typhoid, pneumonia, Addison's disease, acromegaly or any acute or chronic disease causing ill nutrition. Amenorrhea is not a cause of tuberculosis. One of the commonest causes is chlorosis. Anemia at any time in life is likely to be accompanied by amenorrhea. Treatment consists in removing the cause. If due to any obstruction the cause should be determined, then time enough to think of means of relief. Cases without distinct local cause demand no operative or local treatment. Much harm results where measures are taken without distinct purposes in view.

Dysmenorrhea.

Dr. Reuben Peterson, Ann Arbor, said that menstrual pain is not always an indication of disordered genital apparatus, hence therapeutic measures are not so simple. The entire organism is affected by recurrence of menstrual flow, as shown by temperature, pulse and blood pressure. General make-up of individual must be considered in ascertaining cause of pain. Dr. Peterson groups patients suffering from menstrual epoch under two heads: (a) Patients suffering at menstrual period from defects in general nervous system, slight or no derangement of genital apparatus being ascertainable. (b) Patients suffering pain probably due to distinct pelvic lesions. Local treatment is wrong when the cause is general.

Roentgen-Ray Study of Position of Cæcum in Nephroptosis.

Dr. H. W. Longyear, Detroit, described the nephrocolic ligament as an aggregation of fine fasciculi, originating in and being identical with the fibrous tissue forming the framework of the fatty capsule of the kidney, which, after enveloping the kidney in a fine network, passes downward and is inserted into the posterior wall of the ascending colon on the right side. D. Longyear utilizes this ligament for the purpose of supporting both the bowel and the kidney.

Conservative Treatment of Inflammatory Pelvic Conditions.

Dr. Rolland Parmeter, Detroit, said that all cases should be first treated by rest in bed, together with superheated air and hot douches. Greatest aid is superheated air. Cases were cited which were treated with this method with brilliant results. The percentage of cured patients is very high. He stated that it is time enough to operate after this method has proved unsatisfactory and urged conservatism in operating.

Hygiene in Pregnancy.

Dr. W. H. Haughey, Battle Creek, said that birth is a physiologic process. Modern environment produces larger percentage of pathologic conditions than formerly. It is impossible to change the present mode of life, but we can lay down principles of hygiene which, if followed out, will aid in producing health, happiness and longevity. If determining influences be for good during pregnancy, then environment must be looked to in particular. Neuralgias, reflex vomiting, hysterical seizures, eclampsia and puerperal insanity occurring during or immediately after parturition, are due to exhaustion of the nerve cells or to the weakening of them so that they do not properly functionate. There is need for study on the part of the gynecologist together with the family physician. Wholesome food, outdoor exercise, pleasant surroundings, freedom from cars and harrowing tales told by anxious but ignorant friends are necessary if we would prevent sequelæ.

Practical Suggestions for the Limitation of Puerperal Infection.

Dr. J. E. Davis, Detroit, said that it is better to have a slight tear properly repaired than sloughing as a consequence of pressure. Principal factors in the prevention of puerperal infection are cleanliness and accurate approximation of tears. Dr. Davis advises delivery to be made on table. Best means for preparation before surgical interference are hot sterile water and liquid soap. Men doing aseptic surgery and obstetrics have no moral right to come in contact with septic matter. Elevation of bed to promote drainage is important in after treatment. Nurses are often a factor in production of puerperal infection.

Home Treatment of Pulmonary Tuberculosis.

Dr. W. M. Donald, Detroit, said that the home treatment of tuberculosis is of the greatest importance, since under present conditions fully 98 per cent. of the patients suffering from pulmonary tuberculosis must be treated at home and by the family physician. Only about 2 per cent. of the victims of this disease are able to avail themselves of the advantages derived from change of climate. There are other factors of greater importance than change in climate. The improvement derived from proper and nutritious food in a poor climate is greater than that obtained from a favorable climate unaccompanied by good food. The important thing is that the patient should have an abundant supply of fresh air, and this can be obtained at home as well as elsewhere. In the majority of instances where the patients belong to the middle or poorer classes, the essentials of treatment, fresh air, sunshine, good food and rest, may be secured to the best advantage at home. If the nature of the trouble is recognized early, there is no disease which is more curable than pulmonary tuberculosis. The pretubercular stage or the stage in which the patient is in a general weakened condition and furnishes a suitable soil for tuberculous infection should receive more careful attention at the hands of the family physician.

DISCUSSION.

Dr. W. H. Haughey, Battle Creek, reported an interesting case treated with small doses of tuberculin. The patient showed marked improvement, accompanied by a rise in the opsonic index.

DR. GEORGE DOCK, Ann Arbor, spoke of the impossibility of caring for all tuberculous patients in sanatoria. Many of them must either be treated at home or else receive no treatment at all. There are two important factors which tend to invalidate home treatment. One of these is lack of confidence in the treatment, and the other is the failure to attend to details of treatment on the part of the physician. The fact that the treatment of pulmonary tuberculosis is primarily non-medicinal should be fully explained to the patient at the outset. The value of the properly conducted sanatorium is not only therapeutic, but educational as well, and many patients may be sent to sanatoria, not until they are well, but until they have learned in what manner they can best care for themselves and avoid infection to others.

Treatment of Arthritis by Bier's Passive Hyperemia.

DR. FRANK W. SMITHIES, Ann Arbor, said that passive venous hyperemia is produced by constriction only, and hence in that sense is applicable only to the extremities and in a less degree to the head. The application of the bandage requires careful attention. A preliminary cotton roller bandage should be applied to the limb in which the venous hyperemia is to be induced. The rubber bandage should then be applied over this at the point at which it is desired to make constriction. It is very important that the proper degree of constriction be maintained. As a rule, chronic joint affections require fairly strong constriction applied from one-half to two hours daily.

DR. A. W. HORNBECKEN, Marquette, spoke of the great success attending the treatment of infected wounds of the extremities by Bier's method.

DR. GEORGE DOCK, Ann Arbor, spoke of the value of passive hyperemia in the treatment of joint diseases, particularly those which are characterized by their chronicity. In his opinion, the benefit derived from the application of Bier's method in these cases is much greater than that obtained from hot air, hot compresses or packs.

Treatment of Diabetes Mellitus.

DR. HUGO A. FREUND, Ann Arbor, stated that in the treatment of diabetes mellitus the physician should fully understand several things. First, strict diet is incompatible with health. Second, a small amount of sugar in the urine is no cause for alarm, so long as the patient is in good health. Third, to treat each case, an individual problem must be solved. Daily and painstaking observations are essential to this. Roberts' fermentation test is the best method for the practitioner to make use of. Treatment must be guided by the effects on the sugar excretion and results of tissue metabolism. Dietetic methods are the primary and essential ones. Drugs are secondary. Several starches may be tried with strict diet and the ones used that keep sugar excretion at low ebb. Strict diet must never be maintained. Drugs that are useful are opium, antipyrin and salicylic acid. They are to be used in conjunction with diet in severe cases.

The Roentgen Ray in Internal Medicine.

DR. P. M. HICKEY, Detroit, said that the lung is favorable for Roentgen examination on account of being an organ which normally contains a large percentage of air changes in its density through inflammatory infiltration show distinctly on the photographic plate. The size, shape and position of the heart are better shown by the ray than by percussion. Chronic rheumatism has been demonstrated to be a form of arthritis. The physical basis of neuralgia can often be shown. The general diagnostic use of the ray will be found more useful in medicine than in surgery.

Diazo Reaction in Urine.

DR. WILFRED HAUGHEY, Battle Creek, found that whenever the diazo reaction was present it was accompanied by a low percentage of urea. It can be found in either febrile or in non-febrile diseases. It is not infrequently present in chronic heart disease, with normal or even subnormal temperature. The reaction has but a moderate amount of diagnostic value, though a positive reaction during the course of a prolonged fever would point toward typhoid, but the reaction may also be present in miliary tuberculosis. When taken in connection with other symptoms, the diazo reaction forms an important aid to diagnosis.

The Diagnostic Importance of Blood in the Stool.

DR. L. J. HIRSCHMAN, Detroit, made a plea for the early and complete proctoscopic examination of all patients who present themselves with the history of the loss of more or less blood with the fecal passage. He emphasized the importance of not taking for granted the diagnosis of hemorrhoids simply from the history of local hemorrhage. He mentioned the various local rectal diseases, such as internal hemorrhoids, prolapse, fissure, ulceration, stricture, cancer, proctitis, fecal impaction, polypus, villous growth and venereal diseases which cause local hemorrhage. He laid particular stress on the importance of blood not accompanied by pain or other symptoms, as the danger signal in commencing malignant disease. Quoting Boas, he stated that out of 500 cases of cancer of the digestive tract, 83, or over 16 per cent., were located in the rectum, showing how much more frequently cancer is located in this region than is generally supposed. He stated that in his own experience he frequently has cases brought to him with the history of bleeding without pain or other symptoms, who on examination with the proctoscope and sigmoidoscope, showed malignant disease so far advanced that colostomy was the only hope of even temporary relief, and emphasized the importance of early and complete examination when bleeding, however slight, with the stool is encountered.

Other Papers Read.

The following papers were also read:

"Etiology and Clinical Features of Acute Septic Peritonitis," by Dr. T. C. Irwin, Grand Rapids; "Diagnosis of Gall bladder and Bile Duct Diseases," by Dr. F. B. Walker, Detroit; "Ear Cases," by Dr. E. Amberg, Detroit; "Surgical Anatomy of Supports of Rectum," by Dr. J. A. MacMillan, Detroit; "Diagnostic Significance of Abdominal Pain," by Dr. H. W. Yates, Detroit; "The Accoucheur," by Dr. A. N. Collins, Detroit; "Neurasthenia and Neuritis," by Dr. T. Klingman, Ann Arbor.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, July 25-27. Secretary, Dr. J. A. Egan, Springfield.

KENTUCKY State Board of Health, City Hall Building, Louisville, August 1 2. Secretary, Dr. J. N. McCormack, Bowling Green.

CALIFORNIA Board of Medical Examiners, San Francisco, August 6. Associate Secretary, Dr. F. Dudley Tait, San Francisco.

Massachusetts March Report.—Dr. E. B. Harvey, secretary of the Board of Registration in Medicine, reports the written examination held at the State House, Boston, March 12-14, 1907. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 51, of whom 37 passed, including one osteopath, and 14 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Georgetown University	(1906) 76.4	80.2
Howard University	(1906)	79.8
Medical School of Maine	(1905)	81.4
Baltimore Med. Coll.	(1906) 75.2, 75.5,	75.5
Boston University	(1906) 75.7, 77.7,	78.5
Harvard University	(1905) 83.2, 83.8, 84, 84.1; (1906) 84.2, 86.8, 92; (1907) 78.2, 78.8, 79.7.	
Tufts Coll. Med. School	(1903) 80; (1905) 77.4; (1906) 75.5, 75.5, 78.7.	
University of Michigan	(1905)	83.8
Bellevue Hosp. Med. Coll.	(1897)	81.4
College of P. and S., New York	(1905)	82.2
Hahnemann Med. Coll., Philadelphia	(1897)	75.1
Jefferson Med. Coll.	(1906)	76.5
Woman's Medical College of Pennsylvania	(1906)	76.7
University of Vermont	(1899) 77.4; (1906)	82.7
McGill University, Quebec	(1898)	83.8
Bishop's University, Canada	(1905)	75
Royal Coll. of P. and S., Ireland	(1905)	75.6
FAILED.		
National Med. University, Chicago	(1904)	62
American Med. Miss. Coll.	(1902)	70.5
Baltimore Med. Coll.	(1903) 61.8; (1906) 62.3,	70.8
Baltimore University	(1906)	67.5
College of P. and S., Boston	(1905)	65.5
Tufts Coll. Med. School	(1906)	71.2
College of P. and S., St. Louis	(1906)	50.8

Barnes Med. Coll.	(1900)	33
University of the South	(1905)	64.2
Laval University, Quebec	(1901) 69.2; (1906)	61.5
University of London	(1889)	*5.2

* Average on three papers, examination not completed.

Colorado April Report.—Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports that 34 candidates were licensed at the meeting held at Denver, April 2, 1907. All applicants were submitted to an oral examination; 11 were required to take a supplementary written examination, but 4 did not comply. Of the 7 who took the written examinations 6 passed and one failed. The following colleges were represented:

REGISTERED WITHOUT SUPPLEMENTARY WRITTEN EXAMINATION.

College.	Year Grad.
Northwestern University	(1896), (1903), (1904)
Rush Med. Coll.	(2, 1896)
College of P. and S., Chicago	(1886)
Medical Coll. of Indiana	(1896) (1905)
Drake University	(1905)
Hospital Coll. of Med., Louisville	(1906)
Kentucky University	(1906)
University of Louisiana	(1881)
Baltimore Med. Coll.	(1893)
Maryland Med. Coll.	(1905)
Harvard Medical School	(1900) (1906)
Tufts College Medical School	(1905)
University of Michigan	(1887) (1893)
Kansas City Med. Coll.	(1881)
College of P. and S., New York	(1875) (1906)
Miami Med. Coll.	(1906)
University of Pennsylvania	(1899)
Jefferson Med. Coll.	(1887)
University of Vermont	(1893) (1895)
Western University, London, Ont.	(1896)

PASSED SUPPLEMENTARY WRITTEN EXAMINATION.

College.	Year Grad.	Per Cent.
Denver and Gross Coll. of Med.	(1906)	80.6
University of Kansas	(1906)	71.9
Missouri Med. Coll.	(1899)	73.7
Medical Coll. of Ohio	(1901)	72.1
McGill University, Quebec	(1905)	81.2
Kanazana Med. Coll., Japan	(1903)	70.6

DID NOT TAKE SUPPLEMENTARY WRITTEN EXAMINATION.

College of P. and S., Chicago	(1902)
Medical Coll. of Indiana	(1903)
Maryland Med. Coll.	(1904)
University of Pennsylvania	(1884)

FAILED AT SUPPLEMENTARY WRITTEN EXAMINATION.

Keokuk Med. Coll.	(1895)	63.8

Nebraska February Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Feb. 13-14, 1907. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 12, of whom 8 passed and 4 failed. Four reciprocal licenses were granted. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Northwestern University	(1893)	81.6
Rush Med. Coll.	(1902)	87.8
College of P. and S., Boston	(1893)	75.5
Barnes Med. Coll.	(1906)	77.3*
University of Nebraska	(1905)	76.87
Western University, London, Ont.	(1906) 79, 82.8, 84.8	

FAILED.

Sioux City Coll. of Med.	(1906)	72.6
Barnes Med. Coll.	(1904)	73.1
Creighton Med. Coll.	(1906) 65.7,† 70.6*	

LICENSED THROUGH RECIPROCITY.

Northwestern University	(1905)	Illinois
Keokuk Med. Coll.	(1906)	Iowa
Sioux City Coll. of Med.	(1902)	Iowa
Hospital Coll. of Med., Louisville	(1905)	Kentucky

* Second examination.
† Third examination.
‡ Fourth examination.

Nevada May Report.—Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written and oral examination held at Carson City, May 6, 1907. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 6, of whom 5 passed and one failed. Eighteen reciprocal licenses were granted. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Cooper Med. Coll.	(1906)	90
Kansas City Med. Coll.*	(1895)	80
University Med. Coll., Kansas City	(1905)	80
Western Pennsylvania Med. Coll.	(1896)	75
University of Turin, Italy	(1904)	80

FAILED.

Laval University, Quebec	(1906)	50

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago	(1898)	Wisconsin; (1904) Minnesota
Bennett Coll. of Ecl. M. and S.	(1901)	Indiana; (1902) Iowa
Hering Med. Coll., Chicago		(1903) Iowa
Fort Wayne College of Med.		(1884) Indiana
Keokuk Med. Coll.		(1893) Iowa
University of Iowa		(1883) Iowa; (1886) Iowa
Kentucky School of Med.		(1879) Indiana
Baltimore Med. Coll.		(1905) Maryland
Washington University, St. Louis		(1906) Missouri
University of Missouri		(1879) Iowa
Missouri Med. Coll.		(1898) Missouri
Barnes Med. Coll.		(1906) Iowa
University of Michigan		(1884) Michigan
Pulte Med. Coll.		(1885) Indiana
Jefferson Med. Coll.		(1896) Maryland

* In 1905 this college was absorbed by the Medical Department of the University of Kansas.

Washington January Report.—Dr. C. W. Sharples, secretary of the Medical Examining Board of Washington, reports the written examination held at Spokane, Jan. 2-4, 1907. The number of subjects examined in was 11; total number of questions asked, 100; percentage required to pass, 75, and 70 for those having had 10 years' practice. The total number of candidates examined was 80, of whom 67 passed and 13 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical College of Alabama	(1901)	87
Denver and Gross Coll. of Med.	(1895) 70; (1906)	85
California Med. Coll.	(1902)	78
Howard University, Washington, D. C.	(1892)	71
College of P. & S., Atlanta	(1903)	86
Rush Med. Coll.	(1903) 76; (1906)	90, 92
College of P. & S., Chicago	(1898) 79; (1903) 92; (1904) 84; (1906) 75.	75, 82,
Northwestern University	(1895) 74; (1904) 87; (1905) 85; (1906) 78.	
Hahnemann Med. Coll., Chicago	(1900)	89
American Coll. of Med. & Surg., Chicago	(1906)	86
Physio-Medical College of Indiana	(1895)	73
Indiana Med. Coll.	(1906)	85
University of Iowa	(1884)	76
Hospital Coll. of Med., Louisville	(1905)	81
Kentucky School of Med.	(1906)	75
Medical School of Maine	(1898) 75; (1903)	83
Harvard Med. School	(1904) 86, 87, 88; (1905) 83; (1906)	81, 86
Johns Hopkins Med. School	(1902) 79; (1904)	85
College of P. & S., Baltimore	(1893)	74
University of Michigan	(1905)	88, 89
University of Michigan, Homeo. Dept.	(1903)	83, 87
Saginaw Valley Med. Coll.	(1884)	76
University of Minnesota	(1895) 92; (1905) 81; (1906) 80,	84, 89
University of Buffalo	(1895)	89
Lincoln Med. Coll.	(1897)	72
Barnes Med. Coll.	(1906)	72
Willamette University	(1906)	76
University of Oregon	(1905)	79, 80
University of Pennsylvania	(1898) 76; (1901) 86; (1903)	87
Jefferson Med. Coll.	(1887) 71; (1906)	82
Chattanooga Med. Coll.	(1906)	80
Vanderbilt University	(1892)	79
Trinity Med. Coll., Ontario	(1888)	86
Toronto University, Ontario	(1900) 84; (1906)	81
McGill University, Quebec	(1901)	80
Queen's University, Ontario	(1906)	80
Okayama Med. Coll., Japan	(1905)	88
Saisei Med. Coll., Japan	(1896)	73

FAILED.

Rush Med. Coll.	(1899) 72; (1903)	70
Northwestern University	(1900)	71
Louisville Med. Coll.	(1906)	66
Hospital Coll. of Med., Louisville	(1901)	66
National Med. University, Chicago	(1904)	57
Harvard Med. School	(1885)*	
Minneapolis Coll. of P. & S.	(1904)	67
Barnes Med. Coll.	(1906)	71
University Med. Coll., Kansas City	(1898)	71
St. Louis College of P. & S.	(1904)	46
Omaha Med. Coll.	(1882)	65
Trinity Med. Coll., Ontario	(1903)	71

* Percentage not given.

The following questions were asked:

SURGERY.

1. Give the differential diagnosis between dislocation of the head of the femur and a fracture of the neck. Describe the treatment of the latter. 2. Give a summary of the treatment of fracture of the patella by the non-operative method. 3. Give the treatment of delayed union in ununited fracture. 4. Describe the different varieties of hernia and describe one operation for inguinal hernia. 5. Name the different varieties of aneurism and the method of treatment of aneurism in general. 6. Give the symptoms, diagnosis and treatment of intestinal obstruction. 7. Give the symptoms, diagnosis and treatment of chronic tuberculosis of the kidney. 8. Give the treatment of shock resulting from hemorrhage. 9. Give the contraindications for the employment of ether and chloroform. 10. Describe and give treatment of an infection under the palmar fascia.

PREVENTIVE MEDICINE AND MEDICAL JURISPRUDENCE.

1. Differentiate between idiocy and lunacy. 2. How would you determine that a full-term dead babe was born alive or still-born?

3. Give a detailed account for an examination of a body from the standpoint of the coroner in charge. 4. How do you determine that an incised wound was inflicted by a blunt or a sharp instrument? 5. What constitutes expert testimony? 6. How long after recovery would you keep in quarantine a case of (*a*) diphtheria, (*b*) scarlet fever, (*c*) smallpox? 7. Name the portals of entry of tubercular infection. 8. State the best means of disinfecting sputum. 9. Describe the difference between contagion and infection. 10. (*a*) What are the effects of breathing impure air? (*b*) How many cubic feet per person should be allowed in a room for continued occupancy and in a sleeping room?

PRACTICE OF MEDICINE AND DISEASES OF CHILDREN.

1. How would you differentiate between chronic gastritis and carcinoma of the stomach? 2. Define constipation and give its causes, symptoms, effects and non-medicinal treatment. 3. What is vertigo and its different varieties? Give the diagnosis and treatment of one. 4. Give the etiology, symptoms and treatment of hydrothorax. 5. Give causes, symptoms, diagnosis and treatment of myxedema. 6. Describe an attack of angina pectoris. Give its etiology, diagnosis and prognosis. 7. What is asthma? Give its causes and symptoms. 8. Differentiate between hypertrophy and dilatation of the heart, and outline treatment for each. 9. What are the causes, symptoms and effects of adenoids? 10. Describe an attack of enterocolitis in a child. Give its etiology and dietetics. 11. What are the etiology and symptoms of alopecia areata? How is it distinguished from ringworm? 12. Describe an attack of pertussis. Give its etiology, pathology, complications and sequelæ. 13. What are the etiology, symptoms and treatment of stomatomycosis? 14. Contrast ordinary dairy milk with human milk, and give a brief description of the essentials for the production of pure dairy milk. 15. Give symptoms and course, with differentiation, prognosis and treatment of tubercular meningitis in a child.

OBSTETRICS AND DISEASES OF WOMEN.

1. Define presentation and position. Give three examples of each. Which of the latter is the most common? 2. Which is the greatest diameter of the female pelvis, also that of the fetal head? Give the mechanism of rotation of the latter during parturition in the R. O. P. position. 3. At what time of gestation is the placenta formed? How would you treat an inevitable abortion subsequent to its formation? 4. In a difficult labor, on what would you base your decision as to whether Cesarean section or the application of forceps would be the proper procedure? 5. What is placenta prævia? Name the different attachments of the placenta in the same. Give the method of management. 6. Give the symptoms and diagnosis of ectopic gestation. 7. Give the common causes of subinvolution of the uterus and the treatment of each. 8. Define metrorrhagia. Name two of its most common causes prior to the menopause. What would you suspect should it occur subsequent to the same? How would you verify your suspicion? 9. Give your treatment of a recent attack of specific vaginitis. Name two of its most common sequelæ. 10. Give two indications for hysterectomy. Which do you prefer, vaginal or abdominal? State on what ground you would base your preference.

CHEMISTRY AND TOXICOLOGY.

1. What is an antidote to arsenic? What effect has arsenic on the gastrointestinal canal? What effect has it on the nervous system? In arsenic workers, what local condition may be found on the hands? 2. What is an antidote to carbolic acid? What combination is formed by its administration? How would you make a diagnosis of carbolic-acid poisoning before death? 3. Enumerate the symptoms of chronic lead poisoning and give the treatment. 4. Give the treatment of phosphorus poisoning. 5. What are the symptoms of nitrate of silver poisoning and what are the antidotes? 6. Complete the following formula: $Zn + H_2SO_4 =$? and $BaO_2 + 2HCl =$? 7. What is an atom and what is a molecule? 8. What are isomeric compounds? 9. Describe the method of detecting uric acid by HNO3. 10. Describe in detail a method of the quantitative estimation of sugar in urine.

ANATOMY AND PHYSIOLOGY.

1. Name in order the branches of the arch of the aorta. 2. Give the origin, course and termination of the thoracic duct. 3. Describe the occipital bone and name the structures passing through the foramen magnum. 4. (*a*) What tendons form the inner hamstring? (*b*) The outer hamstring? 5. Describe a lumbar vertebra. In what points does it differ from a dorsal vertebra? 6. Describe the diaphragm, mention the openings formed by it, and tell what structures pass through each. Give its nerve supply. 7. Describe the circle of Willis, and name the arteries forming it. 8. What are attachments of Poupart's ligament? How is it formed? Give its surgical significance. 9. How is the venous blood current maintained? What arteries carry venous blood? 10. Describe the normal heart sounds. Give causes which produce each. 11. Give the daily amount, composition and functions of the bile. 12. What part does saliva take in digestion? What is its ferment? Name and give the physiology of the nerve supply. 13. Name and give the function of the various glands of the small intestines. 14. Give the physiology of visual accommodation to light and distance. 15. What is the physiology of blood formation?

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

1. Describe a sebaceous gland. 2. Name the layers of the mucous membrane and give the locations where it is found. 3. Describe the cross section of an artery. 4. Describe the iris. 5. Describe a peptic ulcer of the stomach. 6. Give the pathology of the blood in pernicious anæmia. 7. Name the chief differential points between carcinoma and sarcoma. 8. Describe a method for staining tubercle bacilli. 9. Describe methods of culture of the diphtheria bacillus. 10. What is the Widal reaction?

NERVOUS DISEASES AND DISEASES OF THE EYE AND EAR.

1. Give diagnosis and treatment of migraine. 2. What is tic douloureux? Outline treatment. 3. Mention etiology, symptoms and treatment of sciatica. 4. Describe a case of progressive bulbar paralysis. 5. Briefly describe a case of general paresis. 6. Define: hordeolum, chalazion, ectropion, entropion, ptosis, astigmatism and myopia. 7. Give symptoms and treatment of purulent conjunctivitis. 8. Give diagnosis and treatment of mastoiditis. 9. Describe and give treatment of pterygium. 10. Give the three most common causes of otitis media.

MATERIA MEDICA AND THERAPEUTICS.

1. Define narcotics, anesthetics and sedatives. Give an example of each. 2. Define diuretics and diaphoretics. Give three examples of each. 3. Give the therapy of phosphorus. 4. Give the physiologic action of opium and name its alkaloids. 5. Name the drugs you would exhibit in pneumonia, acute interstitial nephritis and rheumatism. 6. Mention three heart stimulants. Give the adult dose of each. 7. Write a prescription for acute bronchitis, chronic constipation and acute cystitis. 8. Classify the following drugs: Aconite, atropin, pilocarpin, ergot, elaterium and manganese. 9. Name four hypnotics and give the adult dose of each. Name four emetics and give the dose of each. 10. Define an alkaloid and give an example of the same. Define serum therapy. Mention three serums, the indications for their use and state the dose of each.

HOMEOPATHIC MATERIA MEDICA.

1. Give the general appearance of an apis patient. Give leading symptoms that would call your attention to the remedy. 2. Differentiate the uterine symptoms of pulsatilla, cimicifuga, gel., and magn. phos. 3. What symptoms would lead you to choose arnica as a remedy? 4. Give the keynote symptoms of phosphorus. 5. Differentiate the gastric symptoms of ipecac, nux vomica and lycopodium. 6. What remedies may be indicated in cholera infantum? Give indications for two of them. 7. Differentiate the stools of podophyllum, natrum phos., chamomilla, calc. carb., and pulsatilla. 8. Give four symptoms of each of the following remedies: Causticum, iodin and spongia. 9. Name three remedies in uterine hemorrhage. Give indications for each. 10. Give indications for three different remedies useful in scarlet fever.

ECLECTIC MATERIA MEDICA AND THERAPEUTICS.

1. Give the indications and uses of (*a*) fœgnum and., (*b*) asalia hisp., (*c*) cactus grand, (*d*) passiflora inc., (*e*) ipecac. 2. What are antiseptics? Name five and give the indications for their use. 3. When would you use (*a*) phytolacca, (*b*) bryonia? 4. (*a*) Name three drugs that act on the heart. (*b*) Give the indication for the use of each. 5. Give the specific indications for (*a*) baptisia tinc., (*b*) sulphate of soda, (*c*) colocynth. 6. What are cathartics? In what pathologic condition would you use them? 7. Give the specific indications for pulsatilla, sycopus and quinia. 8. What remedy would you use in cholera infantum? In influenza? 9. Do you use poultices? Why? Give a hypothetical case in which you would use them. 10. Give the medicinal treatment for secondary syphilis.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

Summer Diarrhea of Children.*

S. H. Dessau, *Medical Times*, recommends for the management of diarrhea in infants that rest be secured by keeping the child in bed or on the lap without tossing, rubbing the abdomen or disturbing it more than necessary. Cool or tepid baths should be given and the rule should be to give a diluted food or none at all in order to give the digestive organs a rest. Toast water, barley water, rice water or meal soup made by stirring a heaping tablespoonful of browned flour into a pint of a boiling mixture of equal parts of milk and water, are appropriate foods. Fresh, cool air and perfect cleanliness are essential.

The intestines should be unloaded by castor oil or calomel in from 1/10 to 1/20 gr. (0.006 to 0.003) doses given every half-hour. These doses may be continued at three or four hour intervals after the bowels have moved. In cases marked by high fever and toxic symptoms, intestinal irrigation with a salt solution, a teaspoonful to the pint, is useful. Fermentation should be checked, and for this the following antiseptics may be given: Bismuth salts, bichlorid of mercury in 1/100 grain (0.0006) doses, especially when the stools are of a dysenteric character, lactic acid when the stools are very green and excoriating, or buttermilk, which contains lactic acid, prepared by adding a teaspoonful of wheat flour to a pint of buttermilk and bringing to a boil, stirring constantly. Carbolic acid in doses of one fluidram (4.0) of a 1 per cent. watery solution will also be found most useful both as an antiferment and as a gastric sedative, although in exceptional cases it aggravates vomiting.

For the control of vomiting this author recommends ¼ drop (0.005) doses of wine of ipecac repeated hourly, or 1/10 grain (0.006) of cocain hydrochlorate; this, however, must be given

*Doses are calculated for infants one year old.

with care. For the collapse of true cholera infantum, he states that hypodermic injections of three drops of a 10 per cent. solution of chloral hydrate or three drops of ether will produce wonderful results. The following formula is traditionally famous in the same condition:

℞ Olei anisi
Olei cajeputi
Olei juniperi, āā ..... ℥iss 6
Ætheris ..... ℥iv 16
Misturæ sulphuricæ acidæ ..... ℥ss 2
Tincturæ cinnamomi ..... ℥ii 60

M. Sig.: One drop every fifteen minutes in sugar water.

Yeo, in "Clinical Therapeutics," recommends the following combination in acute diarrhea of infants and to check putrefactive changes in the intestine:

℞ Hydrargyri biniodidi ..... gr. 1/50 |0013

M. Dissolve in sufficient potassium iodid and add 1 grain (0.06) of chloral hydrate. Sig.: Give at one dose in a teaspoonful or two of dill water.

In the treatment of acute gastroenteritis of infants this author advises:

℞ Creolini ..... gtt. iii |18
Syrupi althææ ..... ƒ℥v 18
Aquæ menthæ pip. ad ..... ƒ℥iii 90

M. Sig.: One teaspoonful every hour for young infants.

As a powder for infantile diarrhea he recommends the following:

℞ Sodii bicarbonatis ..... gr. iv |26
Pulveris rhei ..... gr. iss 09
Pulveris aromatici ..... gr. i |06

M. Sig.: One such powder to be given twice daily.

When there are milk curds in the stools Yeo advises:

℞ Pulveris guaranæ ..... gr. xv 1
Pulveris ipecacuanhæ et opii ..... gr. ¾ |04
Sacchari ..... gr. xlv 3

M. et div. in pulv. x. Sig.: One powder to be given every two or three hours.

H. B. Sheffield, *New York Medical Journal*, states that it will usually be found that a bismuth and chalk mixture will do well in most cases in which astringents are indicated. The following is a pleasant combination:

℞ Bismuth subnitrate
Chalk mixture, of each ..... ℥iv 15
Glycerin ..... ƒ℥iii 12
Syrup of acacia ..... ƒ℥iv 15
Peppermint water, sufficient quantity to make ..... ƒ℥ii 60

Krameria and tannic acid are best administered in enemas of starch and water. The various newer tannin preparations may be given by mouth with aromatic powder or peppermint sugar.

In fermentative conditions salol is a valuable drug. It may be given to children 1 year old in doses of from half to one grain (0.03-0.06).

In acute indigestion accompanied by colic the following is of service:

℞ Sodii bicarbonatis ..... gr. ii |13
Olei ricini ..... ƒ℥i 4|
Tincturæ opii camphoratæ ..... gtt. ii |13

M. Sig.: Give at one dose.

In such cases it is also advisable to wash out the lower bowel with warm water, and to apply a hot water bag to the abdomen.

Incompatibles.

LIBERATION OF IODIN.

When perchlorid of iron is combined with potassium iodid, such a mixture develops free iodin, the iron being reduced to the ferrous state. The amount of iron that may be liberated is liable to be dangerous. The *Pharmaceutical Journal* calls attention to the following prescription in which this reaction is complicated by a secondary one:

℞ Ferri et quininæ citratis ..... ℥ii 8|
Potassii iodidi ..... ℥iii 12|
Syrupi ..... ƒ℥iv 15|
Aquæ q. s. ad ..... ƒ℥iv 120|

The amount of acid in the solution of the double citrate is small and iodin is slowly liberated. Iodin in potassium iodid solution is a general precipitant of alkaloids and a nearly black precipitate of periodid of quinin will be produced. Addition of enough alkali to neutralize the solution of the scale salt before adding to the iodid will delay the reaction considerably.

Pruritus.

The following combination has been recommended for pruritus vulvæ:

℞ Acidi borici
Phenol (acidi carbolici), āā ..... gr. iii |19
Morphinæ hydrochlor ..... gr. i |06
Adipis lanæ q. s. ..... ℥ii 60|

M. Ft. unguentum. Sig.: Apply locally.

Brocq recommends the following in pruritus:

	Parts.
℞ Phenol (acidi carbolici)	1
Acidi salicylici	2
Acidi tartarici	3
Glyceriti amyli	60-100

Mix. To be applied externally.

J. J. Reid, in the *Medical Record*, states that he has found pilocarpin a valuable drug in pruritus vulva. He gives it in doses of one-quarter of a grain (0.016) when the itching manifests itself and does not repeat the dose till the itching returns. He states that it is well to begin with gr. ⅛ (0.008) as some patients are very susceptible to the drug. If necessary, he gives atropin gr. 1/120 (0.0005) in conjunction with the atropin to prevent sweating.

Shoemaker, "Text-Book of Materia Medica and Therapeutics," states that an ointment of aconitine, 2 per cent., is useful in this condition. Care must be taken, however, not to apply it on an abraded surface.

The same author recommends the following combinations:

℞ Phenol (acidi carbolici) ..... ƒ℥ss 2
Linimenti belladonnæ ..... ƒ℥ii 60
Glycerini
Aquæ rosæ, āā ..... ƒ℥iv 120

M. Sig.: Apply locally.

℞ Fluidextracti pilocarpi ..... ƒ℥ss 15
Spiritus ætheris nitrosi
Spiritus juniperi, āā ..... ƒ℥ii 60
Syrupi acidi citrici q. s. ad ..... ƒ℥vi 180

M. Sig.: From half to one tablespoonful in water every two or three hours.

℞ Infusi pilocarpi
Infusi digitalis, āā ..... ℥ii 60

M. Sig.: Two teaspoonfuls every two or three hours.

Drueck, *Chicago Medical Recorder*, states that when the pruritus is due to proctitis, hemorrhoids, fissure, ulceration, fistula, prolapse or polypus, and the patient refuses surgical treatment, the following combination may give relief:

℞ Hydrargyri chloridi mitis ..... gr. xxx 2|
Menthol ..... gr. x-xx |65-1.30
Petrolati ..... ℥i 30|

Sig.: Apply after bowel movement, first bathing the surface carefully and mopping it dry.

Paralysis Agitans.

The following combination has been recommended to quiet tremor and to induce sleep in paralysis agitans:

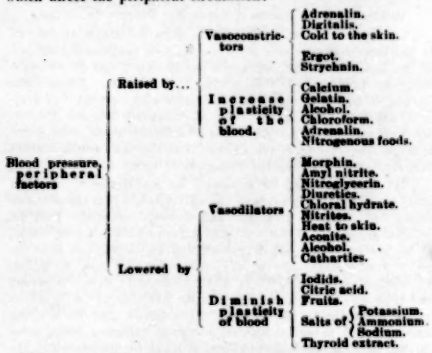
℞ Hyoscinæ hydrobromatis ..... gr. ss |03
Extracti cannabis indicæ ..... gr. xxiv 1|55

M. Div. in capsulas No. 100. Sig.: One or two capsules twice daily.

General Treatment of Hemorrhage.

The internal treatment of hemorrhage has hitherto been largely empirical and, indeed, demands so accurate a knowledge of the finer adjustments of the circulation that it is not possible, even for the expert pharmacologist, to formulate an entirely consistent theory or rule of practice. Both vasoconstrictors and vasodilators have been recommended and sometimes employed conjointly. It is quite improbable that styptic remedies can be conveyed through the blood in such a way as to control bleeding at distant points, yet sulphuric acid, gallic acid, and substances containing tannic acid are still confidently prescribed for hemorrhage from the uterus, kidneys, etc. In many hemorrhages, it is evident that the natural remedy is a lowered blood pressure which gives the opportunity for the formation of thrombi in the bleeding vessel. In

such cases it is evident that vasoconstrictors should be given with great caution, if at all. It is uncertain, however, what the effect of certain remedies on the circulation in the lungs is, and it is believed by some that it is different from that on the peripheral blood vessels. G. W. Webster, in the *Chicago Medical Recorder*, gives the following scheme showing the agencies which affect the peripheral circulation:



Webster considers pulmonary hemorrhage under two heads:

1. Hemoptysis occurring in consequence of the high pressure occasioned in the pulmonary system by obstruction or regurgitation at the mitral valve. In this case pressure is high in the pulmonary system and low in the peripheral arteries. Webster says that the rational treatment is to get the blood out of the venous into the arterial side of the circulation where it belongs. The best remedies for this condition are absolute rest, mental and physical; morphin and digitalis.

2. Hemoptysis occurring in the course of pulmonary tuberculosis. In this case the viscosity of the blood is below normal, the heart is increased in frequency, its efficiency is impaired, and the blood pressure is low. The indications are: Absolute rest in order to lessen the frequency and violence of the respiratory movements, increase of the viscosity of the blood and, if possible, lowering of the blood pressure in the pulmonary circulation.

The patient should lie on the affected side, morphin should be given hypodermically, and 10 drops of chloroform administered in water. Later calcium, hydrastis and a meat diet may be resorted to in order to increase the viscosity of the blood. Finally gelatin may be given hypodermically or normal salt solution may be used in the same way.

Agents which contract the arterioles are contraindicated in these cases, and Hare of London has gone to the extreme of advocating amyl nitrite, which he claims, on the ground of the experimental work of Pic and Pettijean, will at the same time dilate the systemic capillaries and contract those of the pulmonary circulation. Aconite has been given for the purpose of reducing intrapulmonary blood pressure and is recommended by Thompson, who also highly commends the practice of constricting the limbs in succession so as to keep as much of the blood as possible in the systemic circulation. The aconite should be given in 3 minim doses (0.18) of the tincture.

Cerebral hemorrhage must be treated on the general principle of lowering blood pressure. This is best accomplished by the administration of nitroglycerin and amyl nitrite, pushed to the physiologic limit, always bearing in mind the evanescent character of their effects, which last only about ten minutes. As soon as the pressure is brought down by these quickly acting drugs and the hemorrhage has ceased, the lowered blood pressure may be maintained by administration of strong purgatives like croton oil and substances which diminish the viscosity of the blood, such as the iodids, citric acid, the warm bath, aconite, thyroid extract and chloral hydrate. Chloral is especially valuable as it lowers the blood pressure, relaxes vascular spasm and, generally, causes sleep.

Calcium, ergot, adrenalin chlorid, digitalis, hydrastis, cold baths, iron and gallic acid are absolutely contraindicated.

Intestinal hemorrhage, especially that occurring in typhoid fever, should be treated on the same principles as those which govern our action in hemoptysis. The patient should be kept very quiet and stimulation should only be used when dangerous collapse appears to be present. Morphin is an effective remedy to secure quiet, but should not be continued so long as to induce toxemia from the absorption of the products of putrefaction of the retained blood. Adrenalin and other vasoconstrictors are contraindicated. Astringents are of doubtful service. Calcium salts and gelatin are the remedies chiefly to be recommended. Calcium may best be given in the form of calcium lactate, a salt which, unfortunately, is not official, except in the form of the syrup of lactophosphate of calcium. The calcium chlorid may be given.

R.	Calcii lactatis	℥ii	8
	Aquæ		
	Syrupi aurantii, ää	℥i	30
M.	Sig.: Give a teaspoonful four times daily.		

Headache.

Beverly Robinson, in the *Monthly Cyclopedia of Practical Medicine*, says that when we reach digestive disturbances, acute or chronic, we touch really the keynote of very many headaches. An error of diet, some special food, or merely a surfeit of too many foods, will give a headache, which 5 grains of blue mass, followed by a saline draught, will alone relieve effectually and rapidly. In neuropathic conditions he lays stress on neutralization and elimination through the digestive tract. Here, particularly, he advises a diet of sour milk and the moderate use, morning and night, of sulphate of soda.

Irritable Bladder.

The following has been advised in irritable bladder in neurasthenic subjects:

R.	Tincturæ belladonnæ		
	Liquoris potassii hydoxidi, ää	℥i	4
	Potassii citratis	℥ii	8
	Aquæ anisi	℥ii	60
	Aquæ cinnamomi, q. s. ad	℥vi	180
M.	Sig.: One tablespoonful every four hours.		

Anorexia.

The following has been recommended in simple anorexia:

R.	Tincturæ nucis vomicæ	℥iv	15
	Ferri et quininæ citratis	℥iii	12
	Tincturæ gentianæ comp	℥i	30
	Vini xerici, q. s. ad	℥vi	180
M.	Sig.: A teaspoonful in water before meals.		

Medicolegal

Requirements in Labeling of Medicinal Preparations.

James Wilson, Secretary of Agriculture, states, in Food Inspection Decision No. 54, that the law is specific on the subject of declaring the amount of alcohol present in medicinal agents, as can readily be seen from the following language: "An article shall also be deemed misbranded . . . if the package fail to bear a statement on the label of the quantity or proportion of any alcohol . . . contained therein." No medicinal preparations are exempt, whether they are made according to formulæ given in the United States Pharmacopeia or National Formulary, or formulæ taken from any other source. The serial number, with or without the guarantee legend, does not exempt a preparation from this requirement. The law does not make any statement as to the amount of alcohol that may or may not be employed. It requires, however, that whatever amount be present shall be set forth on the label. The percentage of alcohol given on the label should be the percentage of absolute alcohol by volume contained in the finished product.

In Decision No. 55 it is stated that the names of drug products bearing any of the names of the ingredients enumerated in the act are construed as representing "preparations"

within the meaning of the act; and if the same are clearly declared on the label, as required by regulations 17 and 30, it will not be necessary to give the actual amount of the primary drugs used or represented by such article. It is desirable, however, that the word or words used in the law shall constitute the first part of the name of the product. For example: "Opium, Tincture of;" "Cannabis Indica, Extract of," followed by the amount of tincture or extract used.

In Decision No. 56 it is said that the names to be employed in stating the quantity or proportion of the ingredients required by the act to appear on the label of all medicinal preparations containing same are:

First. Those used in the law for the articles enumerated; example, "alcohol," not "spiritus rectificatus."

Second. In the case of derivatives: (a) The name of the parent substance used in the act should constitute part of the name; example, "chloral acetone," not "trichlorethidene dimethyl ketone." (b) The trade name, accompanied in parentheses by the name of the parent substance; example, "dionin (morphin derivative)."

Third. Names of preparations containing the name of some ingredient used in the act. In such cases the name used in the act should constitute the first portion of the name of the preparation.

Fourth. Common names (such as laudanum, Dover's powder, etc.) of preparations containing an ingredient enumerated in the law, provided such name or names are accompanied in parentheses by some such phrase as "preparation of opium" or "opium preparation," followed by the number of minims or grains, as specified in the regulations; for instance, "laudanum (preparation of opium), 40 minims per ounce."

Decision No. 57 holds that if a package compounded according to a physician's prescription be shipped, sent or transported from any state or territory or the District of Columbia to another state or territory or the District of Columbia by a compounder, druggist, physician or their agents, by mail, express, freight or otherwise, the label on such package is required to bear the information called for by Congress. If, however, the patient himself, or a member of his household, or the physician himself carries such package across a state line, and such package is not subject to sale, it is held that such package need not be marked so as to conform with the law, because such a transaction is not considered one of interstate commerce.

The package may be marked so as to comply with the act by either stamp, pen and ink or typewriter, provided all such written matter is distinctly legible and on the principal label, as prescribed in regulation 17.

Expert Testimony Not Admitted to Prove Facts.

The Kansas City Court of Appeals says that the personal injury case of Thomas vs. Metropolitan Street Railway Company was brought to recover damages for injuries alleged to have been sustained Nov. 1, 1902, by the plaintiff being violently thrown to the ground by the sudden starting of a street car. She alleged that there was caused an acute displacement of the uterus and all of her pelvic and female organs were made sensitive and sore. The testimony also developed the fact that she received a similar injury in November, 1899, in alighting from one of the defendant's cars, for which she claimed and received damages, and that injury was referred to in the examination of witnesses in the trial of this case. Then a hypothetical question was propounded to a physician, asking whether, in his opinion, a condition described resulted from the shock of the accident of 1902. The defendant made specific objections to the competency of the question that it did not state the plaintiff's former injuries—the former falling of the womb. This leads the court to say that had there been any evidence to contradict the plaintiff's statement that she has recovered from such former injuries, the question should have included that matter also. It was true that in the opinion of medical experts it was improbable that she had entirely recovered, but that there must exist some latent effect of such former injury. Such expert evidence did not go to establish the fact that she had not entirely recovered, for the well-known reason that expert testimony is not admitted for the purpose of proving a fact. Such evidence is based on admitted facts. The question, however, was improper, as it called for a conclusion of the witness and not as to his opinion. His answer was that "we might suppose that it resulted from the shock." Both the question and answer were incompetent.

Commitment to Insane Asylum Not Defense to Crime.

The Supreme Court of California says the claim of counsel in the homicide case of People vs. Willard that on the subject of the insanity of the defendant the evidence was overwhelmingly in favor of it was without foundation. This claim seemed to be based on several orders of commitment to an insane asylum. But it did not follow at all because the defendant was so committed that the commitment was proof that he was insane to the extent that the law would exempt him from responsibility for his criminal acts.

That insanity may be available as a defense to a crime charged, it must appear that the defendant, when the act was committed, was so deranged and diseased mentally that he was not conscious of the wrongful nature of the act committed. If he has reasoning capacity sufficient to distinguish between right and wrong as to the particular act he is doing, knowledge and consciousness that what he is doing is wrong and criminal, and will subject him to punishment, he must be held responsible for his conduct. Although he may be laboring under partial insanity, as, for instance, suffering from some insane delusion or hallucination, still, if he understands the nature and character of his action and its consequences, if he has knowledge that it is wrong and criminal and that if he does the act he will do wrong, such partial insanity or the existence of such delusion or hallucination is not sufficient to relieve him from responsibility for his criminal act.

The jury was in no wise concluded by the report of the medical examiners that the defendant was insane, or by the opinion of the medical examiners as to the nature of his insanity, or by the judgment which declared him insane and ordered him committed to the asylum. The report of medical examiners, and the judgment and order of commitment being before it, were to be regarded by the jury only as evidence bearing on the question of insanity. These were to be considered by the jury, but what weight or credibility, if any, it should give them, was entirely a matter for the jury's determination.

Physicians' Defense Contract One of Insurance.

The Supreme Court of Minnesota holds, in the case of the Physicians' Defense Company vs. O'Brien, insurance commissioner, that a contract by which a corporation, in consideration of a stipulated amount, agrees to defend a physician against all suits for damages for malpractice at its own expense, not exceeding a fixed amount, but not to pay any judgment obtained against the physician, is a contract of insurance, and the corporation making such a contract is engaged in the business of insurance. The essential purpose of such a contract is not to render personal services but to indemnify against loss and damage resulting from the decrease of actions for malpractice.

It does not require the citation of authorities to show that an agreement to save the assured harmless from a part of a loss is as much a contract of insurance as an agreement to indemnify against an entire loss. A physician is subject to the ever-present peril of an action for malpractice. The defense of such an action, regardless of its merits, requires the expenditure of time and money. If the defense is successful, there is nevertheless a financial loss; if unsuccessful, the amount of the judgment is added to this initial loss. Under this contract the company does not agree to pay the judgment, but it does agree to defend the action at its own expense, and thus in substance indemnify the physician against the risk or peril of being called on to defend such an action. The consideration is paid annually. If no action is brought during the life of the contract, the company gains the amount of this compensation, which it received for subjecting itself to the risk of being called on to defend an action at its own expense.

The conclusion reached in Vredenburgh vs. Physicians' De-

fense Co., 125 Ill. App. ——, and State vs. Laylin, 73 Ohio St. 90, where it is held that this contract is a contract for services only, this court is not able to accept because those cases ignore the fact that a physician is subject to a risk of financial loss from the bringing of an action for malpractice entirely separate and distinct from the loss which results when he is required to pay a judgment.

Opinions in Answer to Hypothetical Questions.

The Supreme Court of Errors of Connecticut says, in re Anderson's Appeal, a will case, that the opinions of expert witnesses given in answer to hypothetical questions, can have little, if any, value, unless the material facts assumed in such questions are substantially true, and it is always proper for the court to so instruct the jury whenever there is conflicting evidence as to the truth of such assumed facts. Such opinion evidence does not, however, necessarily become wholly valueless because there is some variance between the facts assumed in the hypothetical question and the actual facts as proved. What weight should be given in such cases to the opinions of such expert witnesses is generally a question for the jury under proper instructions from the court. Gunter vs. State, 83 Ala. 96; Epps vs. State, 102 Ind. 539; Guetig vs. State, 66 Ind. 94; Hovey vs. Chase, 52 Me. 304; People vs. Benham, 160 N. Y. 445; Quinn vs. Higgins, 63 Wis. 664; State vs. Kelly, 77 Conn. 266-275.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.
June 29.

1 Massage of Prostate and Stripping Seminal Vesicles. F. C. Valentine and T. M. Townsend, New York.
2 *A New Method of Identification Superseding Dactyloscopy. P. Prager, Vienna, Austria.
3 Diagnosis and Treatment of Gastric Ulcer. W. A. Dickey, Toledo, Ohio.
4 *Asthma. E. L. Smith, Chicago.
5 *Mental Symptoms in Nasal Affections. P. Fridenburg, New York.
6 *Experimental Effects of Tobacco on the Nervous System. L. F. Clark, New York.
7 *Diet in Pulmonary Tuberculosis. H. C. Clapp, Boston.

2. Method of Identification Superseding Dactyloscopy.—Prager claims that dactyloscopy is not to be depended on as a means of detecting criminals, because the impressions of the epidermis of the fingers may be changed by extraneous causes. On the other hand, the impressions of the upper and lower jaws are extremely reliable for purposes of identification. No two sets of jaws are in any way alike, and, furthermore, the dental arches are not alike. There is also little likelihood of the impressions being changed in any way, and they can be obtained even after the most serious accidents.

4. Asthma.—Smith is of the opinion that asthma is caused by a reflex irritation of the pneumogastric nerve which causes the muscular fibers of the bronchioles to contract. The cause of this irritation is swelling of the nasal mucous membrane, and pressure on asthmatogenous areas. The circular muscular fibers of the small bronchial tubes are well developed and are controlled by the pneumogastric nerve. That vasomotor disturbance is not the cause of asthma is shown by the fact that spasm of the blood vessels and turgescence of the bronchial mucosa do not cause asthma. Asthma is due to pressure on asthmatogenous areas in the small fossæ. These areas may be on the nasal septum, or rarely it may be due to closed empyema of the ethmoidal cells. Relieving pressure on these areas relieves the asthmatic symptoms. The usual exciting causes in the form of dust, etc., act by causing congestion of the mucosa; so does dampness, while cold, dry air relieves it. Iodin relieves it by lessening congestion, and vasodilators by equalizing the whole vascular system. Adrenalin has the same effect. Atropin diminishes the irritability of the pneumogastric nerve. Burning of niter paper reduces local vasoconstriction. Peptic disturbances and uric acid engorge the asthmatogenous areas. So all the facts tend to prove the author's theory.

5. Mental Symptoms in Nasal Affections.—Fridenberg ascribes as causes for the occurrence of mental symptoms in nasal affections mouth breathing and obstruction of the nares. Among these symptoms he classes headaches and dull pains in conjunction with sinus and nasal disease; motor disturbances, such as convulsive tic and epileptiform attacks.

6. Effects of Tobacco on Nervous System.—Clark claims that the poisonous effects of tobacco on the nervous system depend on nicotin, pyridin and a number of other alkaloids which have not yet been thoroughly studied. Experiments have been made on producing a tobacco that does not contain nicotin and this is not found to be so poisonous, while not so satisfactory to the smoker. The author sums up the results of experiments on animals as to the effects of tobacco on the nervous system thus: Tobacco is primarily a cardiovascular poison; its acute toxic effects on the neuromuscular apparatus are first, as an excitant and mild convulsant; second, a motor nerve depressant, and finally, as a paralysant of the central and peripheral nerves of the heart and lungs. Its chronic toxic effects are to produce congestion of the brain, spinal cord, and peripheral nerves, inducing a mild type of degenerative neuritis. The toxic coefficient is so variable as to make definite conclusions with reference to its effects on man hard to reach.

7. Diet in Tuberculosis.—Clapp agrees that diet is a most important factor in the treatment of tuberculosis. He says that the food must be palatable and well served and the amount must vary with the patient and his circumstances. The outdoor air will enable him to assimilate large amounts. Milk and eggs are the best foods to produce fats, which are most necessary to the patient. The author advocates three solid meals a day, with lunches between of milk and eggs, about three quarts of milk and six eggs a day being taken. Fresh meats are especially necessary for these patients, but a mixed diet is undoubtedly the best borne. Meat juice is valuable. Pastry, candy, fried foods and cabbage should be let alone. Alcohol is not advisable, but coffee, tea and chocolate may be taken moderately.

Boston Medical and Surgical Journal.
June 27.

8 *Transmissibility and Curability of Cancer. W. S. Bainbridge, New York.
9 *Acute Epiphyseal and Periosteal Infections in Infants and Children. J. S. Stone, Boston.
10 Diphtheria Due to Infected Milk. C. Harrington, Boston.
11 Cold Air in Incurable Tuberculosis. H. C. Clapp, Boston.

8. Cancer.—Bainbridge has given the transmissibility and curability of cancer considerable study. He believes that the contagiousness or infectiousness of cancer is far from proved; that the evidence adduced in favor of it is so incomplete and inconclusive that it need not occasion any alarm; that the danger of the accidental acquirement of cancer is far less than from typhoid fever, syphilis or tuberculosis; that in the care of cancer cases there is much more danger to the attendant of septic infection, of blood poisoning from pus organisms, than from any possible acquirement of cancer; that the communication of cancer from man to man is so rare, if it really occurs at all, that it can practically be disregarded; that in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of the utmost importance; that cancer is local in its beginning; that, when accessible, it may, in its incipiency, be removed by radical operation so perfectly that the chances are overwhelmingly in favor of its nonrecurrence; that once it has advanced beyond the stage of cure, in many cases suffering may be palliated and life prolonged by surgical means; that while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest means of cure.

9. Acute Epiphyseal and Periosteal Infections.—Stone reports four cases to illustrate the varieties of lesions originating in the epiphyseal line, as follows: 1. Acute epiphysitis resulting in the sequestration of the epiphysis and incidental involvement of the joint. 2. Acute epiphysitis with perforation into the joint resulting in an acute articular abscess. 3. Acute epiphysitis with perforation outside the joint into the extra-articular tissues. An extra-articular juxta-epiphyseal

abscess. 4. Acute epiphysitis with extension beneath the periosteum—a dissecting periostitis.

New York Medical Journal.
June 29.

13 The Prenuptial Sanitary Guarantee. E. L. Keyes, New York.
*12 *Departmental Influence in the Suppression of Social Disease. W. L. M. Coplin, Philadelphia.
14 Professional Secrecy and Obligatory Notification of Venereal Diseases. W. A. Purrington, New York.
15 Gastrointestinal Disturbances in Influenza. J. Kaufmann, New York.
16 Acute Edematous Eversion of the Ventricle of Morgagni. T. T. Reardon, Boston.
17 Radical Mastoid Operation. W. S. Bryant, New York.
18 Diagnosis and Treatment of Gastric Neuroses. J. D. Dunham, Columbus, Ohio.

12. Suppression of Social Disease.—Coplin does not endorse (1) the medical inspection of prostitutes, (2) the licensing of prostitutes, (3) the medical supervision of brothels, (4) the medical inspection of women contemplating marriage, or (5) the obligatory registration of all cases of venereal disease, but thinks that, judiciously administered, the following measures, in some form, might be given extended trial: 1. A more detailed supervision of the sale of alcohol, particularly to minors. 2. The suppression of the flauntingly conducted brothel. 3 The custodial care and treatment of those who knowingly propagate venereal disease. 4. Proper supervision of institutions for infants. 5. As a prerequisite to the marriage license, the medical inspection and certification of males. 6. A most exhaustive educational crusade directed toward both sexes, and especially parents.

St. Louis Medical Review.
June 22.

19 Case of Epilepsy. G. M. Gould, Philadelphia.
20 Bibliography of Urinary Calculi with History of Cases. R. D. Carman, St. Louis.

Lancet-Clinic, Cincinnati, Ohio.
June 29.

21 Summer Complaint. F. H. McMechan, Cincinnati.
22 Prevention and Treatment of Tuberculosis. H. M. Beaver, Ochiltree, Kan.
23 Counter Irritation. G. A. Pierce, Mt. Clemens, Mich.
24 Mosquitoes and Yellow Fever in New Orleans in 1905. Q. Kohnke, New Orleans, La.

Annals of Surgery, Philadelphia.
June.

25 *Plastic Resection of Mammary Gland. J. C. Warren, Boston.
26 *Gastric and Duodenal Ulcer. W. J. Mayo, Rochester, Minn.
27 *Real Results in Benign Lesions of the Stomach Surgically Treated. J. C. Munro, Boston.
28 *Indirect Subperitoneal Drainage in Extraperitoneal Closure of Purulent Fecal Fistulas. R. C. Coffey, Portland, Ore.
29 *Lipoma of Intestine in Child. G. Chandler, Kingston, N. Y., and L. K. Baldauf, Albany, N. Y.
30 Malignant Type of Pseudomyxoma Peritonei Penetrating Spleen and Colon. M. W. Myer, Columbia, Mo.
31 *Primary Typhlitis Without Appendicitis. C. A. McWilliams, New York.
32 *Local Anesthesia in Inguinal Hernia Operations. J. A. Bodine, New York.
33 *Cysts of Suprarenal Glands. A. J. McCosh, New York.
34 *Toxic Nephritis. N. Jacobson, Syracuse, N. Y.
35 Diagnosis of Obscure Cases of Renal and Ureteral Calculus. A. T. Cabot, New York.
36 *Tuberculosis of Testicle. E. L. Keyes, Jr., New York.
37 Fracture of Greater Tuberosity of Humerus. W. W. Keen, Philadelphia.
38 Fracture of Anatomic Neck of Humerus. Id.
39 Partial Gastrectomy. C. H. Frazier, Philadelphia.

25. Plastic Resection of Mammary Gland.—Warren describes in detail the operation which he has performed 85 times without a single fatality. The advantages of the operation are said to be the slight risk or discomfort to the patient, a shortened period of convalescence, and the absence of any disfigurement.

26. Gastric and Duodenal Ulcer.—Mayo examines this subject from the standpoint of the operating room results, with a view of somewhat modifying the generally accepted opinions.

27. Benign Lesions of Stomach Surgically Treated.—Munro presents an analysis of 150 cases of benign stomach lesions, that came under his observation, in which the end result was noted. Eighty-seven of these cases showed gross ulcers in the stomach, in the duodenum, or in both. Four deaths were directly attributable to technical failures, and other deaths (number not stated) were independent of the operation itself, but consecutive to it. Munro says that the simpler the technic of the operation, and the nearer it follows anatomic lines, the better the result.

28. Closure of Fecal Fistulas.—The procedure advised by Coffey for the closure of fecal fistulas is based on the observation that in doing abdominal operations, in which virulent sepsis is encountered, if sufficient drainage is inserted into the cavity, and allowed to come out through the lower end of the wound, no matter how large the remainder of the wound may be, by using layer sutures it can be closed in the presence of the sepsis, with as full assurance of getting primary union as if it had been perfectly aseptic. The drainage takes place between the layers, thus protecting the sutures and closing the space as soon as the sepsis has been eliminated.

29. Lipoma of Intestine.—Chandler and Baldauf report a case of lipoma of the intestine, occurring in a child 13 months old, and causing symptoms of intestinal obstruction. The tumor was attached to the sigmoid flexure, opposite the mesenteric attachment, by a short pedicle, and it had rotated in such a way that the intestine was twisted twice. The tumor was removed by cutting the pedicle close to the intestinal wall. The child made an uneventful recovery.

31. Primary Typhlitis Without Appendicitis.—McWilliams points out that the prevalent surgical teaching that practically all acute inflammatory conditions in the right iliac fossa are due to appendicitis, may lead to grave errors in diagnosis. He reports one case in point, and reviews a considerable number of cases that have been reported by others. He believes that the following conclusions are justified:

1. Primary, acute and chronic typhlitis occurs independently of appendicitis, dysentery, tuberculosis, actinomycosis or cancer, and is idiopathic in origin or depends on coprostasis.
2. Primary typhlitis, the appendix being normal, may lead to perforation, with the formation of perityphlitic abscess or general peritonitis.
3. The symptoms of primary typhlitis are usually identical with those of appendicitis and the indications for operation are similar in the two conditions.
4. Primary typhlitis is rare in comparison with the frequency of appendicitis.
5. The differential diagnosis of inflammatory typhlitis from tuberculosis, cancer and actinomycosis may be impossible at operation, in which case a section of the cecum should be removed for microscopic examination.
6. The recurrence of symptoms after removal of the appendix may be due to attacks of typhlitis, the treatment for which consists in the regulation of the diet and the use of oil enemata, etc.
7. The danger of a primary typhlitis consists in the liability to the rupture of an ulcer and to the development of appendicitis.
8. Purgatives are contraindicated in inflammations of the right iliac fossa because of the danger of rupturing an ulcer in the cecum or appendix, or of breaking up the adhesions about an abscess.
9. The treatment of primary typhlitis consists in laparotomy, removal of the appendix, closure of any perforation if possible, evagination of any threatening perforation of the cecum, drainage of the right iliac fossa and the removal of a piece of the cecal wall for microscopic examination, if that be necessary to establish the diagnosis.

32. Local Anesthesia in Hernia.—Bodine claims that local anesthesia is entirely adequate for the radical cure of inguinal hernia, and that it is solely on anatomic grounds that the operation lends itself peculiarly to local anesthesia.

33. Cysts of Suprarenal Gland.—To four cases reported by other surgeons McCosh adds a personal case, in which the suprarenal gland was removed through a lumbar incision. With a trochar and canula nine pints of fluid were removed from the cyst.

34. Surgical Toxic Nephritis.—Jacobson reports three cases in which, after the removal of the causal condition, all evidence of renal disease disappeared. The first one was presumably a staphylococcic infection, in which the patient suffered from septic endocarditis as well as nephritis; the second was a case of intestinal obstruction without septic disturbance of any kind and in which in consequence of the complete arrest of intestinal function a very serious and all but fatal form of nephritis was awakened; in the third case there was complicating gallstone disease, a subacute pancreatitis, and in consequence of the disturbance of the secretory function of this gland a toxic condition was aroused, causing not only nephritis but also glycosuria.

36. Tuberculosis of Testicle.—As the result of a study of the histories of 100 patients suffering from tuberculosis of the testicle, Keyes arrives at the following conclusions:

1. Testicular tuberculosis is clinically never an isolated lesion. It is only one feature of a general genital tuberculosis, for
2. Sterility is frequent if not constant, at the time the first testis is invaded.

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3. There is evidence at this time of inflammation of the internal genitalia.
4. Relapses in the opposite testicle occurs within a few years, in eight or nine out of ten cases, and
5. Such relapse is in no wise postponed by early removal of the diseased testis.
6. Moreover, though suppuration seems often to result in permanent cure of the local process, and
7. Though a chronic focus several years old is likely never to suppurate, yet
8. In no case can one feel certain of a real cure unless the tubercular epididymitis has been removed.
9. The demoralizing effect of epididymectomy is not to be compared with that of castration.
10. Slight tuberculosis of the testis may be depended on to heal spontaneously after removal of the epididymis.
11. Hence epididymectomy is the radical operation of choice, unless there is hyperacute generalized epididymoorchitis, or unless the testis is destroyed by suppuration.
12. This operation has a beneficial effect on the general health and on tuberculosis of the internal genitals.
13. It should, therefore, be performed early in the disease. This in spite of the fact that:
14. Tuberculosis of the testis is often but an insignificant part of a generalized progressive tuberculosis, or:
15. Is for many years the only active lesion of the disease.
16. If the patient is sterile, it would probably be wise to remove both epididymes, even though only one side is diseased.

Journal of the Medical Society of New Jersey, Orange.

June.

40 Treatment of Albuminuria in Pregnancy. E. J. Ill, Newark.
41 *Operation for Vaginal Tears During Labor. S. Chandler, Philadelphia.
42 *The Fashion of Dieting. H. Vreeland, Jersey City.
43 Physical Diagnosis in Croupous Pneumonia. T. G. Ashton, Philadelphia.
44 *The Aseptic Conscience. J. W. Martindale, Camden.
45 *Treatment of Erysipelas. P. A. Potter, East Orange.
46 President's Address, Camden City (N. J.) Med. Soc. H. H. Sherk, Camden.

41. **Vaginal Tears.**—Chandler describes an operation for repair of vaginal tears, for which he claims the following advantages: 1. It makes a vaginal wall as near to the natural and normal wall as it is possible. 2. It removes all diseased or scar tissue. 3. It exposes the levator ani, or the urogenital trigonum muscle, which can be caught up and united. 4. It renders perineal operations more easily accomplished. 5. It prevents future relaxation of the vagina, because the various tissues are united to the tissues of the same class. 6. It does not leave a tissue that can be drawn apart as with the old operation. 7. It permits union between the rectum and the vagina, braces both, preventing constipation. The same may be said of the bladder, allowing such adhesions to form as existed originally. 8. It will, in many cases, relieve permanently constipation and bladder complications, while the other operations, because of their incompleteness, do so, if at all, only temporarily. 9. The field of the operation is always before the operator; there is, therefore, not so much danger of injuring the rectum, as in the snipping operations. 10. The scar produced is thin and strong. 11. The vagina after this operation is supported by some of the surrounding parts, and in return helps to support the surrounding parts.

42. **Fashion of Dieting.**—Vreeland speaks against the prevailing fashion of dieting, not as forced on those acutely ill, but as practiced by the ordinary individuals who are less healthy and less happy because of the notion of dieting. He believes that it is often harmful to suggest the avoidance of certain foods to nervous patients, and that it is the suggestion and not the food that is injurious. He says that desserts are not indigestible, except for the fact that they are usually eaten after the appetite has been satisfied by the so-called substantial food. Vreeland expresses strongly his conviction that dieting is a pernicious habit, and that physicians do wrong to advise and ambulatory patient or one who is not acutely ill to abstain from certain foods and to indulge in others.

44. **The Aseptic Conscience.**—Martindale discusses the necessity of cultivating what he terms the aseptic conscience, that is, to do everything possible to avoid infection, disinfecting and sterilizing instruments thoroughly and well.

45. **Treatment of Erysipelas.**—Potter describes the result of various treatments employed in 71 cases of erysipelas. In 37 of these cases he used a combination of camphor and chloral, one part of the latter to three of the former, with good results. The patients all recovered, and although the treatment did not appear to affect the course of the disease, the patients gained relief from the application. In 10 cases ichthyol collodion was used with equally good results. In 5 cases application of cold water yielded good results, while in 5 other cases no treatment at all was given, except a little calomel, and dilute hydrochloric acid; and the patients recovered just as quickly as did the others mentioned. In 3 cases every kind of treatment was tried, including the use of antistreptococcic serum, without avail. The patients died. Red light was tried in 3 cases. Potter says that in his opinion the treatment of erysipelas is expectant and that there is no specific for this disease.

Northwest Medicine, Seattle.

May.

47 Etiology and Symptomatology of Tuberculous Peritonitis. N. M. Baker, Spokane.
48 Differential Diagnosis and Prognosis of Tuberculous Peritonitis. S. V. R. Hooker, Seattle.
49 *Treatment of Tuberculous Peritonitis. A. E. Cunningham, Spokane.
50 *Localizing Method for Radiographic Examination of the Eye. H. Power, Spokane.

49. **Treatment of Tuberculous Peritonitis.**—Cunningham is of the opinion that all the very acute cases belong to the internist, but when medication and hygienic measures fail, the question of laparotomy should be considered.

50. **Radiographic Examination of Eye.**—Power describes a localizing method for foreign bodies in the eye, which he has used with a great deal of satisfaction. Very precise measurements can be made and the body located with great accuracy.

New Orleans Medical and Surgical Journal.

July.

51 The Venereal Peril and Public Apathy. A. Nelken, New Orleans.
52 Tuberculosis. W. J. Durel, Covington.
53 Treatment of Laryngeal Tuberculosis. H. Dupuy, New Orleans.
54 *Unusual Cases of Urethral Lesions. C. W. Allen, New Orleans.
55 *Trypsin in Epithelioma of Larynx. H. Dupuy, New Orleans.

54. **Diseases of Urethra.**—In the first case reported by Allen the sequence of events was about as follows: Gonorrhea, indifferently treated, followed by a stricture, which was dilated with sounds. The patient then treated himself for a while, until it became impossible to introduce the sound, even with force. Then the man suffered from frequent micturition, priapism, then an occasional inability to micturate, with complete impotency. All this trouble was caused by a spasmodic contraction of the cut-off muscle, due to the stricture. The second case reported was very similar to the first.

55. **Trypsin in Laryngeal Epithelioma.**—Dupuy's patient was 50 years of age. The disease had existed about six months. The growth involved the anterior third of the right true and false vocal cords. The involved structures were excised, and the point of origin, the right ala, of the thyroid cartilage thoroughly curetted. One month later the growth recurred, on the opposite side, and although a laryngectomy was decided on, trypsin injections were first given. This treatment was continued until the patient had received 1,100 minims of trypsin, hypodermically, during a period of about five months, when the tumor was no longer visible. There has been no recurrence after two months.

American Journal of Urology, Boston.

May.

56 *Three Cases of Spermatocele. C. M. Whitney, Boston.
57 *Tuberculosis of Urinary Tract. M. Fuller, New York.
58 Pathologic Diagnosis of Tuberculosis of the Urinary Tract. E. E. Smith, New York.
59 Hematuria Due to Pathologic Conditions of Bladder. M. W. Ware, New York.
60 The Peptolytic Factor in Vesical Carcinoma. W. T. Belfield, Chicago.

56. **Spermatocele.**—Whitney says that spermatoceles are rare, that they are usually of considerable size as they present themselves clinically, that they contain non-albuminous fluid with great numbers of permatozoa, that their origin is not always the same, but in the main is that of retention cysts formed in various ways, either externally or internally, as regards the seminal tubules; that their diagnosis before tapping is not easy, but may be helped by ascertaining the position of the testis; and that finally, their treatment either by injection of irritating solutions or by operation is exceedingly simple and satisfactory.

87. **Tuberculosis of Urinary Tract.**—In cases of kidney tuberculosis in which radical surgery is advisable, Fuller deems nephrectomy the only operation to be recommended. Nephrotomy, he says, is usually only of temporary benefit, since that operation, by not removing the infected area, is very apt secondarily to aid the tuberculous process, by stirring it to further activity; the tissue disturbances and the traumatism consequent to the operation acting as factors in the dissemination and aggravation of the disease.

Ohio State Medical Journal, Columbus.
June.

81 *Etiology of Appendicitis. G. Crile, Cleveland.
82 Escherichia Coli Tests Under a Cyclopiegic. W. McL. Ayres, Cincinnati.
83 *Physicians' Local Protective Association. E. D. Helfrich, Galion.
84 Medicine and Philosophy. C. M. Wanner, Urbana.
85 *Choice of Anesthetics. B. J. Goodman, Columbus.
86 Tuberculosis. C. M. Harpster, Toledo.
87 Suggestions for New Year. W. B. Hubbell, Elyria.
88 Cooperation of the Minister and Physician for the Welfare of the Community. E. A. Montgomery.
89 Modification of Lever of Bedard for Application of Pressure in Scoliotic Rib Deformities. H. O. Feiss, Cleveland.

81. **Observations on Appendicitis.**—Crile analyzed 1,000 cases of appendicitis with reference to the etiology of this affection. He found that in a large percentage of cases there was a short mesoappendix, causing fixation of the proximal portion of the appendix and leaving the distal part free. This tended to cause the appendix to fold on itself and interfered with the circulation—in short, the result of an anatomic angulation. Then there is the retroperitoneal appendix, and the appendix in which there is no sharp demarcation between the end of the cecum and the beginning of the appendix. Appendical concretions play a small rôle and so, too, thrombosis of the artery of the appendix. Infection of the mucosa, inflammation of neighboring organs, traumatism, and some unusual gastronomic feat were noted as causes of appendicitis. In four cases the passage of a renal calculus operated as a cause, while in one case a gallstone was found in the appendix, although foreign bodies played almost the least important rôle of the various factors.

83. **Physicians' Local Protective Association.**—Helfrich advocates a uniform fee bill and condemns contract practice, urging that county societies take the necessary steps to promote the one and to prevent the other. He describes the organization of a physicians' protective association in his county medical society, whose purpose it is to abolish contract work, poor work, lodge work, cheap insurance work, and to protect physicians against the "dead-beat" people. This association has been unusually beneficial in that particular county.

85. **Choice of Anesthetics.**—Goodman condemns routine methods of anesthesia, because every case is a law unto itself, and no one anesthetic can be used universally, if the best interests of the patient are concerned. He thinks that ethyl bromid is the safest and best for short operations, and as a preliminary anesthetic. He claims that the scopolamin-morphin-ethyl-bromid other scheme of anesthesia is the best so far advanced and is the one he would choose if he had to submit to an operation.

Cleveland Medical Journal.
June.

70 *Gangrene of Both Legs Following Pneumonia. H. J. Lee, Cleveland.
71 Malignant Tumors of Kidney. A. F. House, Cleveland.
72 Abdominal Section During Pregnancy for Ovarian (Dermoid) Tumor with Twisted Pedicle. H. Robb, Cleveland.
73 Analysis of 178 Consecutive, Unselected Abdominal Sections. R. E. Skeel, Cleveland.
74 Treatment of Gleet. C. G. Foote, Cleveland.

70. **Gangrene of Legs Following Pneumonia.**—The patient, a woman, whose case is reported by Lee, had a typical uncomplicated pneumonia, the crisis occurring on the eighth day. She became weak at the crisis, the heart was acutely dilated, the beat became irregular and the sound of the apex markedly rough. On the tenth day she had a severe pain in the knee and her toes and foot gradually became cold and painful. On the following day the same thing occurred in the left leg. There was no popliteal pulse, but the pulse was distinct in the femoral. On the fourteenth day there was a distinct bigeminal pulse. The line of demarcation became distinct, and both legs were amputated under spinal anesthesia. On the morning of the operation the patient developed a septic pneumonia. She eventually recovered.

St. Paul Medical Journal.
June.

75 Contraindications in Surgery. M. H. Richardson, Boston.
76 Psychoneuroses and Their Treatment. C. E. Riggs, St. Paul.
77 *Dementia Paralytica in a Child. C. R. Ball, St. Paul.
78 Nasal Sinus Disease and Its Surgical Relations. D. H. Lando, St. Paul.
79 Extrauterine Pregnancy. C. A. Wheaton, St. Paul.
80 The Institute Smell. C. J. Fox, Washington, D. C.

77. **Dementia Paralytica in a Child.**—Ball reports a case of dementia paralytica observed in a girl 16 years old. When one month old she developed a rash, which lasted at intervals over a period of two years. She has scars on her back, said to be due to abscesses; she had an ulcer of the cornea when 4 years old; has a saddleback nose and Hutchinsons' teeth. The general effect of the face is that of a little old woman. Her mother died of pneumonia, and her father of a mental affection whose course and symptoms suggested progressive paralysis. Up to the age of 10 the girl was bright, but then gradually her mentality gave way, until now her mind is a perfect blank. She can not talk, is unable to feed herself, and is absolutely indifferent to her surroundings. There is incontinence of urine and feces.

Annals of Otology, Rhinology and Laryngology, St. Louis
March.

81 Labyrinthine Suppuration Complicating Purulent Otitis Media. E. B. Dench, New York.
82 Clinical Value of Differential Blood Count in Acute Brain Disease and Acute Double Mastoiditis. W. P. Brandegee, New York.
83 Deformity of Nose from Lupus; Corrected by Subcutaneous Method. J. O. Roe, Rochester, N. Y.
84 *Trypsin Treatment of Malignant Disease Involving Left Tonsil, Base of Tongue, and Epiglottis. J. T. Campbell, Chicago.
85 Conservation of Hearing in Operations on Mastoid Region. W. S. Bryant, New York.
86 Routine Nasopharyngeal Examination in Preparatory School. J. A. Babbitt, Philadelphia.
87 Method of Forming Skin and Periosteal Flap in Tympano-Mastoid Exenteration. S. M. Holmes, Boston.
88 Faulty Methods of Brain Localization in Intracranial Lesions Complicating Aural Disease. S. M. Smith, Philadelphia.
89 Determination of Aural Acuity by Whisper Test. L. Zwaardemaker Utrecht, Netherlands. (Translated by C. Loeb, St. Louis.)
90 Case of Chronic Sinusitis Cured by Intranasal Treatment. J. P. Clark, Boston.
91 Papilloma of Nose; Case of Hyperosmia; Case of Panotitis Complicated by Empyema of Nasal Accessory Sinuses. T. J. Harris, New York.
92 Examination of Throat in Chronic Systemic Infections. J. L. Goodale, Boston.
93 Epithelioma of Ear. W. C. Braislin, Brooklyn.
94 Diagnosis and Treatment of Laryngeal Cancer. F. Semon, London, England.
95 Importance of Correcting Pathologic Conditions of Nose and Throat in Patients with Incipient Tuberculosis. W. S. Anderson, Detroit, Mich.
96 Complete Congenital Occlusion of Right Posterior Naris. L. D. Brose, Evansville, Ind.
97 Incorrect Nomenclature in Our Literature. H. Schwartze, Halle, A. S.
98 Submucous Resection of Nasal Septum. L. M. Hurd, New York.
99 Tonsillectomy by Electrocautery Dissection. E. Fyschen, Chicago.
100 Observations in 1,000 Adenoid Operations. F. B. Sprague, Providence, R. I.

84.—The report of this case was published in THE JOURNAL, Jan. 19, 1907, page 225.

Archives of Ophthalmology, New York.
May.

101 Epithelial Inclusion Cysts of Conjunctiva. E. L. Oatman, Brooklyn.
102 Keratitis Disciformis. O. Landman, Toledo, O.
103 Ocular Disturbances Due to Pressure on or Stretching of Cervico-dorsal Sympathetic. J. Dunn, Richmond, Va.
104 Case of Monocular Ophthalmoplegia Internal and External. O. Landman, Toledo.
105 Physiology and Pathology of the Lens. G. Freitag, Würzburg, Germany.
106 Paralysis of Fourth Cranial Nerve Due to Trauma. W. H. Snyder, Toledo.
107 Metastatic Carcinoma of Choriod of Each Eye. J. Collier, Erlangen, Germany.

Montreal Medical Journal.
May.

108 Fatal Perforating Gastric Ulcer. J. A. Hutchison, Montreal.
109 Report of Two Patients Operated on for Deformities Resulting from Tuberculous Disease of the Hip. A. M. Forbes, Montreal.

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110 Five Cases of Cesarean Section. H. L. Reddy, Montreal.
111 Four Unusual Cases of Acute Mastoiditis. G. H. Mathewson, Montreal.
112 Sporadic Glandular Fever. G. G. Campbell.

Iowa Medical Journal, Des Moines.
May 15.

113 Evolution in Medicine. H. Bailey, Waterloo.
114 Diseases in Diseases of the Eye. L. W. Dean, Iowa City.
115 Fees for Life Insurance Examinations and Contract Practice. C. J. Plonske, Bancroft.
116 President's Address, O'Brien County (Iowa) M. S. H. Scott, Paullina.
117 Incomplete Laceration of the Perineum. F. A. Palmer, Morris, Ill.

Detroit Medical Journal.
May.

118 Medical Library of the University of Michigan. G. Dock, Ann Arbor.
119 Eight Cases of Extrauterine Pregnancy. R. R. Smith, Grand Rapids.
120 Theory of Opsonins and Bacterial Vaccines. E. M. Houghton, Detroit.

American Journal of Public Hygiene, Boston.
May.

121 Pasteurization of Milk. E. J. Lederle, New York.
122 Pasteurization of Milk for Public Sale. T. M. Rotch, Boston.

Southern California Practitioner, Los Angeles.
May.

123 Intestinal Flatulent Dyspepsia. P. Cohnheim, Berlin, Germany.
124 Autotoxemia a Causative Factor in Nervous Conditions. L. Doig, San Diego.
125 Care of the Parturient Woman. T. Coffey, Los Angeles.
126 Obligations of Theology to Medicine. H. Rice, Pomona.
127 Gastric Ulcer: Perforation and Hemorrhage. (Continued.) A. S. Lobingier, Los Angeles.
128 Operations on the Stomach. E. A. Bryant, Los Angeles.
129 Final Results of Operations on Stomach. W. W. Beckett, Los Angeles.

Ophthalmic Record, Chicago.
May.

130 Endotheliома of Orbital Tumor. C. A. Leonheer, Chicago.
131 Practical Trial Frame. N. M. Black, Milwaukee, Wis.
132 Case of Carcinoma of the Cornea. W. H. Dudley, Los Angeles.
133 Study in Atavistic Descent of Congenital Cataract Through Four Generations. E. Stieren, Pittsburg, Pa.

Ohio State Medical Journal, Columbus.
May.

134 *Practical Bacterial Therapy and Theory of Opsonins. A. P. Ohlmacher, Detroit.
135 Psycho-physical Parallelism. M. K. Isham, Cincinnati.
136 Progress of Neurologic Medicine. C. J. Aldrich, Cleveland.
137 Purulent Ophthalmia. C. Lubens, Toledo.
138 Pneumonia. R. E. Atwood, Montpelier.

134.—All the important points in this article were covered in the article by Dr. Ohlmacher which appeared in THE JOURNAL, Feb. 16, 1907, page 571.

Journal of the Kansas Medical Society, Columbus.
May.

139 Chronic Appendicitis. F. A. Carmichael, Goodland.
140 Guides to Diagnosis. P. J. Hendrickson, Columbus.
141 Obsessions, Phobias, Impulses. C. C. Goddard, Leavenworth.
142 Case of Pelvic Peritonitis. C. D. Blake, Ellis.
143 Ethics. J. H. Boswell, Baxter Springs.

Vermont Medical Monthly, Burlington.
May 15.

144 Relation of Rural Typhoid to Water Supplies. B. H. Stone, Burlington.
145 Experiments on Typhoid Bacillus in Water and Ice. J. M. Wheler, Burlington.
146 Typhoid Outbreak in Mill River Valley. C. S. Caverly, Rutland.
147 Operations for Senile Cataract. J. H. Woodward, New York.

St. Louis Courier of Medicine.
May.

148 Paraffin: Its Value in Surgery. E. A. Babler, St. Louis.
149 Early Operation in Intracranial Injury. M. G. Gorin, St. Louis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
June 15.

1 *Affections of Speech. W. H. Broadbent.
2 *Cerebrospinal Meningitis Treated by Lumbar Puncture and Vaccine. H. Mackenzie.
3 Circumcision as a Rite and as a Surgical Operation. J. Bland-Sutton.
4 Radical Cure of Urethral Strictures by Internal Urethrotomy. J. MacGunn.
5 *Congenital Hypotonia (Congenital Amyotonia). C. Coombs.
6 *Opsonins in Treatment of Tuberculosis. J. E. Squire.
7 Value of Complete Vocal Rest in Laryngeal Tuberculosis. H. G. Pelkin.
8 Myxedema and Exophthalmic Goiter. S. Gooding.
9 Phleboliths and Roentgen Rays. L. H. Harris.
10 Plugging the Posterior Nares. A. O. Ward.
11 Case of Complete Separation of Rectum from Anus. J. S. Martin.

1. **Affections of Speech.**—Broadbent reports the case of a boy, aged 14, of superior intelligence, who could not read aloud. He was remarkably alert intellectually, fond of reading, full of information, ready and apt in conversation, but could not read even short words, not because the matter was difficult or unfamiliar, but apparently as if he had to grasp its meaning and pass it through his mind for utterance. The boy ultimately gained the faculty of reading aloud fairly well, but with great effort, and when he read aloud the attention was so concentrated on the task that he did not understand what he read.

2. **Cerebrospinal Meningitis.**—Mackenzie considers lumbar puncture of great value in all forms of meningitis, and urges that it be resorted to as soon as the diagnosis is made, and repeated at short intervals, especially when there are signs of intracranial pressure. This was done in the case reported, but the patient also received injections of meningococcus vaccine, on five different occasions, the dose varying somewhat. The vaccine was prepared from organisms cultivated from the fluid withdrawn by lumbar puncture. The patient made an excellent recovery.

3. **Congenital Hypotonia.**—Coombs reports a case of this kind occurring in a young girl of 10. Within half an hour of her birth one hand was noticed to be peculiarly flabby and loose, but no other sign of weakness was apparent until she began to get about and learn to walk. Gradually there developed a general muscular laxity, except in the extrinsic high muscles and in the muscles of mastication. Her mental powers were normal. In fact, no weakness was demonstrable in any of the muscles supplied by the cranial nerves. There was an entire absence of contracture, which was thought to be due to the fact that the muscles, though small and hypoplastic, were not completely wanting. Apart from the condition of the muscles there was nothing of the nature of trophic change. Massage increased the muscular strength of the legs, but the hands did not respond to treatment.

6. **Specific Treatment of Tuberculosis.**—Squire believes that vaccination against tuberculosis is quite as justifiable and quite as useful as vaccination against smallpox. He is not sanguine as to the probability of curing pulmonary tuberculosis, by either direct or indirect immunization, but thinks it quite possible that prophylactic immunization might be accomplished.

The Lancet, London.
June 15.

12 Pelvic Inflammations in the Female. T. Wilson.
13 Experimental Researches on Specific Therapeutics. P. Ehrlich.
14 Treatment of Cardiac Dilatation. D. Duckworth.
15 *Causes and Surgical Treatment of Colitis. J. P. L. Mummery.
16 *Sacrococcygeal Teratoid Tumor with Formations of Metastases in Groin. S. Pringle.
17 Case in Which Glycosuria, Depending on Cholecystitis and Cholangitis, Disappeared After Drainage of Bile Ducts. C. W. M. Moullin.
18 *Gout. C. Mercier.
19 Case of Melena Neonatorum. A. R. Gunn.
20 Fatal Case of Melena Neonatorum. A. M. White.
21 Case of General Pneumococcal Infection, with Acute Necrosis of Bone. J. A. Coutts.
22 Case of Large Papilloma of Ovary. W. M. Robson and P. N. B. Odgers.

15. **Colitis.**—Mummery believes that colica mucosa has no claim to be described as a disease any more than has diarrhea or hematemesis, but that it is a symptom or condition, which may result from a number of different diseases of the colon of widely different characters. In 36 cases observed by him diarrhea was a prominent feature in the majority of cases, and in some it was most severe. Bleeding occurred in 22 cases; mucus was present in the stools in all the cases in sufficient quantities to draw the patient's attention to it. Intestinal sand was seen in 2 cases. It consisted of carbonates and phosphate of calcium and ammonia. Enterospasm was present

in one case. A definite inflammatory condition of the mucosa was found in 24 cases. Ulceration was present in 7 cases. Severe pruritus was present in 7 cases, and in 7 cases the colitis was due to a tumor of the bowel. In 4 cases there was a chronic hypertrophic catarrh associated with edema of the submucous tissue. Mummery does not think that the operation of ileosigmoidostomy is advisable except in a few exceptional cases.

16. **Sacrococcygeal Teratoid Tumor.**—Pringle's patient, a male, aged 57, first noticed the tumor when he was 22 years old. It was situated in the middle line some distance behind the anus. When he was 24 years old he noticed a small, hard lump in the right groin, and 13 years later another lump appeared just above this. The primary tumor measured 15 inches in length by 11 in width. It presented irregular lobulations, and the overlying skin was mottled blue in color in some parts and red and inflamed in others. The tumor appeared to be more or less fixed to the sacrum. There was increasing difficulty in defecation and micturition. Owing to the size of the primary tumor its removal was considered inadvisable. The glands in the right groin were removed. The patient died 14 months afterward. The original tumor weighed 2 pounds and 15 ounces, and on section had the appearance of a congenital cystic sarcoma. Pringle thinks that the tumor belongs to the class of monogerminal tumors. No bone, hair, teeth, etc., could be found.

18. **Gout.**—Mercier, himself the victim of gout, discourses on its origin. He believes that gout is due to uric acid, but not to mere excess, and that the combination of uric acid that produces gouty symptoms is not always the same. There are probably many urates, which agree in being noxious and in being more or less proof against separation by the kidney, but which differ in their pathologic effects. Mercier suggests as an explanation for the deposition of these urates in and around joint structures that the articular cartilages secrete a substance which has a predominate power of breaking down the combination of uric acid with its organic ally, and converting it into urate of soda. Hence, he thinks it is not unreasonable to assume that this action of the cartilage may be as conservative to the organism as a whole as the action of the blood cells in separating bacilli and consuming them.

Journal of Obstetrics and Gynecology of the British Empire, London.

June.

23 *Malignant Vaginal Polypus Secondary to Adrenal Tumor of Kidney. A. Doran.
24 Duration of Pregnancy and Relation Between Weight of Child and Duration of Gestation. J. C. H. Leicester.
25 *Abdominal Section in Puerperal Peritonitis. A. K. Gordon.
26 Case of Chorioepithelioma of Uterus with Luteln Cysts in Both Ovaries. G. F. Blacker.
27 Fibromyoma of Cervix Uteri. J. N. Stark.
28 Eclampsia and Nephrectomy. S. Sheill.

23. **Malignant Vaginal Polypus.**—Doran relates a case wherein malignant pedunculated tumor developed in the vagina of a woman aged 40, some of its lobes coming away from time to time, while one of three sessile adjacent growths showed pseudomelanosis of the adjacent vaginal mucosa. The tumor proved to be secondary to an adrenal adenoma of the kidney. Nephrectomy was performed, the patient surviving the operation for three months. After death metastatic deposits were detected in the liver and lung as well as in the vagina.

25. **Abdominal Section for Puerperal Peritonitis.**—Gordon reports 10 cases of puerperal peritonitis in which an abdominal section was done, with four fatalities. He is of the opinion that, as a rule, it is best not to flush or even sponge the peritoneal cavity, but to rely rather on free drainage at the most dependent part, with subsequent propping up of the patient in the sitting position, and the subcutaneous injection of saline solution, with or without antistreptococcic serum and adrenalin.

Australasian Medical Gazette, Sydney.

April 20.

29 President's Address Before New South Wales Branch of the British Medical Association. F. A. Pockley.
30 *Notes on Ninety Abdominal Operations. W. B. Byrne.
31 Perforated Duodenal Ulcer. E. H. Marten.
32 Id. C. F. Todd.
33 *Case of Sudden Death. E. L. Borthwick.
34 Latent Tuberculosis of Tonsils and Pharyngeal Adenoid Tissue. B. Tyrie.
35 Postgraduate Work in London and Paris. C. L. Handcock.
36 Case of Hemophilia Neonatorum. E. W. K. Scott.
37 Typical Case of Exophthalmic Goiter. W. J. Morton.

30. **Abdominal Operations.**—In the series of 90 operations reported by Byrne there were only three deaths, one following hysterectomy, another after gastroenterostomy and the third after an attempt had been made to close a deep fecal fistula, which caused a septic peritonitis. The operations done included 32 ventrosuspensions, 17 oöphorectomies, 16 hysterectomies, 2 gastroenterostomies, 7 appendectomies, 4 herniotomies and 2 operations for extrauterine gestation. Byrne never flushes out the abdominal cavity, using dry swabs to clear away any soiling, and seldom or never employs drains.

33. **Sudden Death.**—Borthwick reports a case of sudden death, with symptoms of strychnin poisoning, but careful examination of all the internal organs failed to show any test for strychnin. The cause of death could not be ascertained.

Indian Medical Gazette, Calcutta.

May.

38 Cultivation and Preservation of Calf Lymph. J. N. Cook.
39 *Treatment of Colopteis. C. Lane.
40 Plea for More General Use of Desmarre's Eyelid Retractor in Cataract Extraction. H. Gidney.
41 *Arthritis in Dysentery. C. Brodribb.
42 Radical Cure of Hydrocele by Incision and Eversion of Sac. L. G. Fink.
43 Case of Traumatic Femoral Aneurism. E. O. Thurston.
44 Successful Ovariotomy. E. Balm.
45 Subcranial Hemorrhage. L. R. Scott.
46 Abdominal Pain in Pneumonia. M. F. Beaney.

39. **Treatment of Colopteis.**—Lane passes two sutures through the external longitudinal band of the ascending colon and attaches this to the peritoneum of the abdominal wall, as high as possible. Stout silk is used for this purpose.

41. **Arthritis in Dysentery.**—Brodribb reports a typical case of hydrops articuli of both knee joints, following an attack of dysentery.

Dublin Journal of Medical Science.

June.

47 Our Debt to Ireland in the Study of the Circulation. G. A. Gibson.
48 Early Diagnosis of Perforated Gastric Ulcer. W. G. Harnett.
49 Disease of Infants. C. H. McComas.

Annales d Finstitut Pasteur, Paris.

50 (XXI. No. 4, pp. 241-320.) *Serum Treatment of Bacillary Dysentery. (Sérothérapie dans le traitement de la dys. bac.) Vaillard and C. Dopter.
51 *Hematozoa of Birds. (Hématozoaires d'Oiseaux.) E. Sergent.
52 Experimental Glanders in Guinea-Pig. (Morve exp.) M. Nicolle.
53 Infection by Spirillum of Tick Fever. (Spirille de la Tick-fever.) Lovaditi and Manceaûlian.
54 *Action of Wine on Typhoid Bacillus. (Action du vin sur le bac. d'Eberth.) J. Sabrazès and A. Marcandier.

50. **Serum Treatment of Dysentery.**—This communication has already been summarized, page 1905 of the last volume. It reports that the serum from horses immunized to the dysentery bacillus has proved in 243 cases of dysentery as effectual and reliable as diphtheria antitoxin in diphtheria. The effect is evident at once and the patients are the first to remark on the improvement in their condition. It is also effectual as a preventive, and Vaillard and Dopter affirm that its harmlessness justifies its free use, not only to relieve and cure the sick, but to arrest epidemics by curing the first cases and by preventive immunization of those exposed.

51. **Hematozoa of Birds.**—Sergent has made a number of interesting discoveries in relation to the blood parasites of various birds and their intermediate hosts. The *Stegomyia calopus*, as well as the culex, proved susceptible to infection from some of the bird parasites.

54. **Action of Wine on Typhoid Bacilli.**—In this communication from Bordeaux, a great wine-growing district, a number of experiments and tests are described which seem to prove that pure wine has considerable bactericidal power. It is stated that all the germs in the wine die in the closed bottle after a time, and typhoid bacilli among the first. Water added to wine reduces the bactericidal property of the wine, but if left long enough in contact, typhoid bacilli in the mixture are destroyed. Equal parts of pure white wine and a

contaminated water become sterile on standing six hours, while equal parts of red wine and water require twelve hours before complete destruction of typhoid bacilli in the water. The writers add that this might be found a means for purifying drinking water, rendering boiling, filtering, etc., unnecessary, while the bactericidal properties of bottled wine might be utilized in an emergency by surgeons or obstetricians.

Presse Médicale, Paris.

55 (XV, Nos. 28-29, pp. 225-240.) The Problems of a Pure Water Supply. (Eau potable.) E. A. Martel.

56 *Advantages of Abduction in Treatment of Fractures of Shaft of Humerus. (Advantages de la mise en abduction du bras, etc.) Bavarland.

57 *Medical Pedagogics. (Pédagogie méd.) L. Landouzy.

58 *Catheterization of Ureter Through the Opened Bladder. (Cathétérisme de l'uretère à travers la vessie ouverte.) F. Legueu.

59 *The Roentgen Ray and the Genital Glands. (Rayons X et glandes génitales.) P. Ancel and P. Bouin.

56. Advantages of Holding the Arm in Abduction in Treating Fractures of the Humerus.—The illustrations show the advantages of the technic. A band over the flexed elbow exerts traction on the arm outward and downward. This brings the lower stump into the same axis as the upper, and the dressings can be applied without distressing the patient, while the parts heal in perfect coaptation.

57. Medical Pedagogics.—Landouzy preaches anew that medicine is not a matter of understanding, but of listening, looking, feeling, every day of the year and the patients every year, all one's life, listening, looking at and palpating. This is the way to become a true physician, and the teaching of medicine should be by object lessons.

58. Catheterization of the Ureter Through the Opened Bladder.—Legueu sometimes finds it necessary to make an incision into a tuberculous bladder for the purpose of catheterizing the ureters to determine the condition of the kidneys. He occasionally encounters cases in which the state of the bladder renders accurate diagnosis otherwise impossible; after exhausting all diagnostic measures he is still in doubt as to whether the assumed kidney lesion exists or is unilateral. In such cases he makes a transverse incision in the bladder through an abdominal median incision. The anterior lower lip of the bladder wound is fastened to the skin over the pubic bone, while the rest of the blauder lip is fastened at eight or nine points to a special retractor which spreads in a semicircle more than half way around the opening into the bladder. It is thus held open over nearly its entire extent. None of these measures is required for a healthy bladder, but they are indispensable for examining the diseased bladder in certain severe cases. He then introduces into the meatus of the urethra a No. 22 sound, pushing it up into the bladder. The end is cut off when it emerges in the bladder. This much facilitates the passage of the two ur ter catheters through the urethra into the bladder. With a small-grooved sound he then seeks for the mouth of the ureters and draws up the catheters. When the ureter catheters are in place, he seizes the occasion to inspect and treat the bladder lesions as indicated. The bladder is then sutured as after a stone operation. He has thus treated four patients, the results confirming the advantages of the technic. He was able to determine the existence of one sound kidney and by nephrectomy to restore the patients to comparative health. In one instance the kidneys were both found sound, the bladder lesions being the only trouble, and the ample access allowed enabled these lesions to be promptly cured.

59. Roentgen Rays and Genital Glands.—Ancel and Bouin review the evidence in regard to the local action of the Roentgen rays on ovaries and testicles. In the ovary, the external secretion and the internal secretion both suffer and disappear under the action of the rays. In the male, on the other hand, only the external secretion suffers, while the internal secretion is retained unimpaired. The power of procreation thus becomes lost in the male, but the sexual characteristics and appetites are retained, while in the female all the signs of total castration are observed.

Semaine Médicale, Paris.

60 (XXVII, No. 23, pp. 265-276.) Hypersecretion of Gastric Juice. (Gastrosuccorrhée.) L. Cholmine.

61 (No. 24, pp. 277-288.) *Post-typhoid Muscular Affections. (Myopathie consécutive à la fièvre typhoïde.) G. Guillain.

62 *Can a Pregnancy be Absorbed? (La grossesse peut-elle se résorber?) R. de Bovis.

61. Post-Typhoid Muscular Affections.—Guillain presents evidence to prove that a progressive atrophying myopathy is liable to occur after typhoid fever, and should rank with other remote complications of that disease, such as acritis, myocarditis, kidney affections, chronic encephalitis and inflammation of the visceral passages—all organic affections which run a special clinical course, but yet are attributable primarily to the typhoid fever. The post-typhoid muscular affections may be of the nature of hypertrophy of the muscle consecutive to vascular lesions, actual angiomyopathies, developing during the acute stage of the disease, but not progressive, or they may assume the form of a progressive pseudohypertrophic or atrophic myopathy, commencing during convalescence and continuing a slowly progressive course. He describes a case of this latter type; the patient was a healthy man of 45, who after typhoid fever at 39, gradually developed amyotrophy, entailing finally complete inability to use the legs or arms. Guillain thinks that the muscular lesions resulting from infections and intoxications deserve more study. He is convinced that many cases of supposed polyneuritis are, in fact, more of a neuro-myositis, including in this term all forms of inflammation and degeneration of the muscle. Post-typhoid myocarditis has been better studied than other post-typhoid myopathies; there is reason to believe that a similar process may occur in other muscles.

62. Can a Pregnancy be Absorbed?—De Bovis discusses a case recently reported by Polano in which the uterus appeared to be at about the fourth month of a pregnancy when the abdomen was opened for removal of ovarian cysts. After the operation the uterus gradually resumed the non-gravid appearance, without expulsion of anything to suggest a pregnancy. Polano thinks that the appearance of pregnancy was simulated by a mole in the uterus, and that the mole was gradually absorbed after the operation. De Bovis argues that this need not have been the case, and that there is no reason for scouting the idea that ovum and membranes might be absorbed under certain conditions. This can occur in rabbits. After bilateral ovariotomy or thermocauterization of the corpora lutea, the entire pregnancy may vanish without abortion, when the operation is done at a sufficiently early stage. This and other facts observed in the clinic suggest the possibility that gestation may be interrupted and the products absorbed.

Archiv f. Gynäkologie, Berlin.

Last indexed, XLVIII, page 382.

63 (LXXXI, No. 2, pp. 495-738.) *Anatomy and Clinical Importance of Nerve Plexuses in Female Pelvis. (Nervengeflechte im weiblichen Becken.) O. Roith.

64 *Angioma of Placenta. (Angiom der Placenta.) F. Kermauner.

65 *Subcutaneous Pubiotomy and Ultimate Outcome. (Hebotomie, 30 Fälle und "Dauererfolge.") Kanngiesser.

66 *Influence of Pubiotomy on Indications for Version and Extraction. (Beeinflussung der Indication zur Wendung und Extraction durch die Hebotomie.) Lichtenstein.

67 *Question of Justification of Artificial Premature Delivery. (Künstliche Frühgeburt.) G. Leopold and E. J. Konrad.

68 *Perforation of Viable and Dying Child. (Perforation des lebensfrischen und absterbenden Kindes, 1892-1906.) C. Meissner.

69 *Forceps in Treatment of Contracted Pelvis, to Save the Child. (Zange in der Ther. des engen Beckens zur Rettung des Kindes.) Leisewitz.

70 *Study of Cesarean Section Based on 229 Cases. (Sectio cesarea.) G. Leopold.

71 *Spontaneous Delivery with Contracted Pelvis. (Spont. Geburt bei engem Becken.) F. Weindler.

72 *Experiences with Contracted Pelvis in Respect to Saving Child. (Das klinische Jahr 1906, etc.) G. Leopold.

63. Nerve Plexuses in Female Pelvis.—Roith describes extensive personal anatomic research and draws a number of conclusions from his findings. Among them is his statement that resection even of considerable portions of a nerve plexus causes less disturbance than irritation of the plexus from cicatricial growth. The arrangement of the plexuses and sensory fibers in the pelvis seems to be peculiarly adapted to the physiologic processes. The evidence is all in favor of the possibility of reflex neuroses originating in the pelvic plexuses.

64. Angioma of the Placenta.—Kermauner describes a case. The tumor was found in the placenta from a primipara of

nineteen, a healthy young woman. He has compiled records of seventy-three other cases in the literature; the microscopic findings were approximately the same in all.

65-72. **Cesarean Section, Pubiotomy, etc., at Leopold's Gynecologic Clinic.**—Eight articles are devoted to the clinical experiences at the Dresden clinic with various obstetric operations, and the entire material is analyzed to learn the lessons which it teaches for the future. None of the patients died in the 51 pubiotomy operations, but there was morbidity in 67 per cent. of the first 21 cases and in 47 per cent. of the last series of 30 patients. However, with the exception of one woman with gonorrhea, all the patients were discharged in good health without interference with the gait. One child was born dead in the first series, but none in the second; the mortality was thus 2 per cent. Nineteen women in the first series were recently examined and only one complained of any disturbances—merely local pain during fast running. Six of the patients have passed through a second pregnancy since. The pelvis was not permanently enlarged in any instance. The outlook for the children, it is affirmed, has been much improved since the introduction of pubiotomy. It has reduced the frequency of the necessity for version without abolishing it altogether. Cases in which version and extraction used to be considered indispensable to save the child, on account of great disproportion between the size of the child and of the pelvis, now should be treated by pubiotomy. The general practitioner should learn the technic in order to be able to refer suitable cases to the hospital, or to operate himself, but, as a general thing, version and extraction remain as before valuable measures in general practice. All the instrumentation that is required for pubiotomy is a Döderlein hook, a pair of Gigli's wire saws and any ordinary table. A number of assistants are indispensable, a medical man to give the anesthetic, a second to protect the skin with sponges while the sawing is being done, two persons to hold the legs and to press the pelvis together, from the trochanters, after the bone is sawed, and an obstetric nurse to give the douches that may be necessary and to care for the child. Good asepsis should also be insured. Technical skill is also necessary as, besides the introducing of the needle and the sawing, the physician is liable to have a complicating laceration of the vagina with exposure of the stumps of the bones and even of the bladder. The fourth and most indispensable requisite for the operation is good obstetric training, for the technic is less difficult than the decision as to the indications for the operation. Women must be spared unnecessary pubiotomies. Cesarean section has been done 229 times in the clinic, and it is strictly emphasized that these two operations are much more serious for the mothers than induced delivery. Perforation was required in fifty-seven cases with living children and in 112 with children already succumbing. Too long expectant treatment, waiting for spontaneous delivery, compelled perforation in a number of cases. When there is considerable disproportion between the head and the pelvis of a primipara, but the head presents favorably and labor is vigorous, the case should be accepted as requiring pubiotomy if nothing has been gained by the end of six hours. If the head does not present favorably, Cesarean section is indicated. Experience has shown that when the posterior parietal bone presents, it does not yield to forceps, and perforation finally becomes necessary, as a rule. A woman with a contracted pelvis, especially if she has had difficulties in previous childbirths, if seen in time, should be referred to a clinic to determine the indications as to whether she should be delivered at the thirty-fifth week or be allowed to go to term. Leopold discusses the six deaths from Cesarean section for which he holds the clinic responsible. In one case one of the assistants omitted to put on rubber gloves; in another adhesions from a Cesarean section years before caused injury of the transverse colon, unnoticed at the time, as the uterus was drawn forward. In this case perforation should have been done, especially as gonococci were found in the secretion. In another case the uterus, with the ileum, was incarcerated in backward displacement. The expectant treatment in this case was a mistake; pubiotomy should have been done without delay. Existing gonorrheal infection is unfavorable or even disastrous for both pubiotomy and Cesarean section. This has been proved again and again by the experiences in the clinic until no further doubt can remain on this point.

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed XLVIII, page 1184.

73 (LXXXI, Part 2, pp. 1-606.) *Chronic, Unilateral Interstitial and Hemorrhagic Nephritis. Recovery After Nephrectomy. (Nephritis.) O. v. Angerer.
74 Operative Treatment of Recent Irreducible Luxations and Fractures. (Frische irreponible Lux. und Fract.) H. Schiange.
75 Combined Method of Removing Cancers of Rectum and Colon. (Combinierte Operationsmethode.) J. Rotter.
76 Surgery of Joints. (Gelenkchirurgie.) Fritz König.
77 Treatment of Fractures of the Leg. (Unterschenkelbrüche.) R. Morian.
78 *Appendicitis with Other Affections. (Perityphlitis in Combination mit anderen Erkrankungen.) de Ruyter.
79 Pathology and Treatment of Congenital Megacolon. (Hirschsprungsche Krankheit.) Roth.
80 Experiences with Military Surgery in German Southwest Africa. (Kriegschirurgische Erfahrungen.) Franz.
81 Indications in Case of Bullet Wounds of Skull During a Campaign (Schädelwunden.) W. v. Oettingen.
82 Treatment of Rupture of the Liver. (Leberrupturen.) R. v. Hippel.
83 Diagnosis of Tumors of the Upper Jaw. (Oberkiefergeschwülste.) H. Wolff.
84 Incision for Mammary Cancer. (Hautschnitt, etc.) W. v. Brunn.
85 Cysts of the Long Bones and Fibroid Osteitis in Their Etiologic Relations. (Cysten der langen Röhrenknöchen und Ostеomyelitis fibrosa.) P. Bockenheimer.
86 Tumor Formation in Aberrant Parotid Cells. (Tumorbildung in verspreng ten Parotiskeimen.) N. Guleke.
87 *Experimental Transplantation of Suprarenals. (Nebennierenverpflanzung.) H. Coenen.
88 Mechanism of Dislocation of Meniscus. (Meniscuslux.) R. Schultze.
89 *Value of Leucocyte Count in Acute Appendicitis. (Verwerthbarkeit der Leukocytenzählungen.) E. Sonnenburg.
90 Congenital Retroglenoid Dislocation of the Shoulder. (Schulterluxation.) F. v. Bramann.
91 Non-parasitic Cysts of Long Bones. (Nicht parasitären Cysten der langen Röhrenknöchen.) E. Lexer.
92 *Operations in Posterior Cranial Fossa. (Operationen der Tumoren am Kleinhirnbrückenwinkel, etc.) M. Borchardt.
93 *Surgery of the Kidneys. (Nierenchirurgie.) O. Rumpel.
94 *Diagnosis of Hour-glass Stomach. (Sanduhrmagen.) A. Schmitt.
95 General and Partial Disturbances in Growth of Mammals After Brief Roentgen Exposures. (Wachsthumsstörungen nach R. Bestrahlungen.) K. Förstering.
96 Supplementary Anus. (Anus duplex.) G. Friedel.
97 Coxa Vara. R. Grashey.
98 *Spinal Anesthesia. (Lumbalanästhesie.) Hauber.

73. **Nephrectomy for Hemorrhagic Nephritis.**—The patient whose case is described fell on the region of the right kidney when stepping out of a boat. After two years of health, the previously robust man of fifty-two exhibited symptoms of chronic interstitial and hemorrhagic nephritis in the much enlarged kidney of the side affected. No benefit was derived from systematic and prolonged medical measures, and von Angerer removed the diseased kidney with surprisingly favorable effect. The patient is now, six months later, in apparently perfect health and goes on hunting trips in the mountains. Decapsulation and nephrotomy were not attempted for fear of more dangerous hemorrhages and the possibility of recurrence of the trouble.

78. **Appendicitis in Combination with Other Affections.**—Five cases are related by de Ruyter in which the patients were operated on for assumed perforation of the appendix. In two the main trouble was a ruptured tubal pregnancy; the appendix was sound in one case and filled with pus in the other. In two other cases the appendix merely happened to be involved in an extensive cancerous growth. In the fifth case conditions were found apparently normal in the abdomen, although symptoms had indicated recurring appendicitis. Since the operation the patient, a nervous woman of twenty-seven, a housemaid, has been in good health. The case is reported as one of hysterical appendicitis.

87. **Transplantation of Suprarenals.**—All Coenen's attempts in this line gave negative results. Whether implanted whole or in pieces the transplanted suprarenals were always absorbed by the end of two months; nothing was left but a small mass of pigment in granulating cells.

89. **Leucocyte Count with Acute Appendicitis.**—Sonnenburg regards the leucocyte count as a valuable diagnostic measure in acute appendicitis, but not so much as a sign of suppuration as on account of its importance as indicating the reaction of

this organism and the kind of infection. A low figure indicates paralysis of the resisting powers from the action of toxins. The absolute figures of the blood count are not so important a the continued tracing; showing a tendency to rise or fall. It is possible that a rapid destruction of neutrophile leucocytes may occur, resulting from the sudden passage of large numbers of bacteria or of toxins into the circulation, manifested clinically by a chill. Sonnenburg's experience has always been that absorption of pure toxins reduces the number of leucocytes. The whole theory of immunity is based on the activity of the leucocytes, but the later conceptions ascribe less importance to the personal participation of the leucocytes in the struggle against invading bacteria than to the products generated by them, the antibodies, whether antibacterial or antitoxic.

92. **Operations in the Posterior Cranial Fossa.**—Borchardt's success in a few cases of lesions in the posterior cranial fossa under operative treatment has already been chronicled in these columns. He here reviews the history of operative intervention in this region and gives brief summaries of all the cases of which he has knowledge, a total of 152. In 14 cases of cyst, 13 of the patients recovered after removal of the cyst into sound tissue or mere evacuation of its contents. In 21 cases of tuberculoma of the cerebellum, 12 patients succumbed to the shock of the operation, and 3 died two months later from miliary or meningitic tuberculosis. Of the remaining 5, only 2 were alive after 9 months, but one of these is at work and the other seems likewise cured except for a concomitant coxitis. The results were better in the 101 cases of true tumors which he analyzes. In 60 instances the tumor was not found, and the 60 patients soon succumbed. In 15 cases great improvement and in 17 an actual cure were reported. In this last group the tumor was not found in 5 instances, but the relief from the operation amounted to an actual cure. Omitting these, there are still 12 cases in which the patients were completely cured by surgical intervention. In 19 cases of tumor in the cerebellar-pontine angle, 3 of the patients were cured by removal of the tumor. Borchardt describes his technic with illustrations. He removes the bone permanently, emphasizing the necessity for an exploratory incision of the cerebellum. Operating in two sittings instead of one, reduces the danger of shock. In one of his cases—a tumor in the medulla oblongata—the patient took the anesthetic so badly that respiration stopped with the first whiffs of chloroform and no operation was attempted beyond making a small opening in the bone. This relieved the pressure and enabled the operation to be performed without shock a few days later. In case of gumma, he would not operate until after mercury and iodid have been pushed. In cutaneous syphilis, sometimes apparently refractory lesions yield finally to a course of 4 or 5 inunctions a day with potassium iodid, kept up for about 6 weeks.

93. **Surgery of the Kidneys.**—This communication relates the experiences at von Bergmann's clinic during the last two or three years. Fourteen typical cases are described in detail. They show among other points the great services that cryoscopy of the urine and other functional tests can render under certain circumstances. Cases in which an ovarian cyst or other abdominal tumor simulated a kidney affection were cleared up by the lack of difference between the freezing point of the urine from the two kidneys. Another point emphasized by the experiences related is that the cystoscopic findings in regard to the orifices of the ureters are more frequent and more pronounced with tuberculosis than with any other kidney affection.

94. **Diagnosis of Hour-Glass Stomach.**—Schmitt has encountered hour-glass stomach in thirteen cases in which he was performing an operation on the stomach during the last five years. In three instances the hour-glass contraction occurred and vanished intermittently. If the contraction is near the pylorus, vomiting occurs toward the end of digestion, and a large quantity of stomach content is expelled at one gush. It will be noticed, however, that the ingredients of the food vomited are those which normally remain longest in the stomach, while those that are first digested have passed on into the intestines. In case the stenosis is near the cardia, the vomiting occurs earlier after eatin , and a smaller amount is expelled. If the contraction is in the center of the stomach, vomiting generally occurs about two or three hours after eating, and small amounts are expelled at intervals. It was sometimes observed that the vomiting became irregular or ceased altogether while the nausea and pain persisted, and the patient felt worse than before. The food had been forced through the contraction, but the pyloric region was unable to pass it on or to force it back. The act of vomiting is accompanied with greater pain than under other conditions, as a rule. The pain on the whole resembles that of acute distension of the stomach with carbonic acid, and it does not subside after vomiting, but persists, intense and unmodified, sometimes for half an hour afterward. When the patients are placed on a restricted diet, the severity of the pains is lessened considerably, but with the return to more solid food, the pains again become severe. The most striking symptom, however, is with lavage of the stomach. After the fluid has been coming out clear for some time, suddenly old relics of food, sometimes in considerable amounts and more or less decomposed, appear in the rinsing fluid. This symptom may not be observed every time after lavage, but when it is encountered it differentiates hour-glass stomach. This assumption is further confirmed by the vanishing of water poured into the stomach. It can not be aspirated out again, but disappears. In one case pressure on the pyloric region caused a splashing or gurgling sound on auscultation of the cardial region, and vice versa, while pressure on the point of the contraction caused no sound on either side. Roentgen examination with bismuth always gave characteristic findings, but chemical tests were vague, and transillumination of the organ gave unreliable results. Schmitt regards gastroenterostomy as the standard operation for hour-glass stomach, preferring the posterior retrocolic technic with a short afferent loop. Adhesions must always be detached; mere dilatation of the contraction through an incision exposes to danger of recurrence.

98. **Spinal Anesthesia.**—Hauber's article closes this volume of the *Archiv*, which was dedicated to E. von Bergmann on the occasion of his seventieth birthday. The first part is from his friends and colleagues, the second from his former and present assistants, closing with four articles from former pupils. Fourteen large plates accompany the volume. Hauber relates satisfactory results from spinal anesthesia in 280 cases. He regards this mode of anesthesia as indicated in case of cardiac defect, arteriosclerosis, pulmonary affections, etc., also for extremely exhausted patients as after a serious accident or long occlusion of the bowels. It is likewise indicated for elderly persons, experience having shown that it is tolerated exceptionally well by them. Ideal results were observed with operations for hemorrhoids, hydrocele, rectal fistula and bladder stones. The results were satisfactory with amputations of the legs and with inguinal and femoral hernias. He adds that postoperative bronchitis or pneumonia never occurs with spinal anesthesia.

Berliner klinische Wochenschrift.

99 (XLIV, No. 17, pp. 509-552.) *To Hasten Determination of Tubercle Bacilli in Urine by Inoculation of Animals. (Nachweis des Tub.-Bac. durch den Tierversuch.) A. Bloch.

100 Practically Negative Influence of Cocoa on Assimilation of Nitrogen and Fat. (Beeinflusst Kakao die Ausnutzung von Stickstoffsubstanz und Fett der Nahrung?) V. Gerlach.

101 Improved Forceps. (Neuer Forceps.) N. J. A. F. Boorma.

102 Arsenic as Poison and Remedy. (Arsen.) T. A. Maase.

103 Refractometric Examination of Blood. (Blutuntersuchung.) Marcus.

104 *Absorption of Inflammatory Infiltrates in the Spermatic Ducts. (Samenleitende Organe.) E. R. W. Frank.

105 School Vacations. (Ferienfrage.) Margulies.

106 Conditions of Solubility of Uric Acid in Urine. (Lösungsbedingungen der Harnsäure im Harn.) Determeyer.

107 Physical Measures in Treatment of Diabetes (Physik. Heilmittel und Diabetes.) S. Munter.

108 Pale Spirochete for Diagnosis of Syphilis. (Nachweis der Sp. pall., etc.) R. Schuster.

99. **Rapid Determination of Tubercle Bacillus in Urine by Inoculation of Animals.**—The technic described by Bloch requires only from nine to eleven days for a decisive response to the test. He injected 1 c.c. of the suspicious urine into the right inguinal region of the guinea-pig and then took up

between his thumb and for finger the inguinal fold of the animal, stroking it from within outward until he could feel the glands like little nodules between his fingers. He then crushed the glands between his fingers, thus inducing lesions which offered an exceptionally favorable soil for the growth of the bacteria in the fluid which had just been injected. In every instance in which the course of the cases confirmed the assumption of a tuberculous process, the injected glands swelled and masses of tubercle bacilli were found in them. His experiments were always conclusive, and he urges others to try the method as it will probably prove equally useful for differentiating tuberculous products of any kind, and it may be possible to shorten the time still more.

104. **Treatment of Inflammatory Infiltrates in Vas Deferens.**—Frank remarks that relics of inflammation in the spermatic ducts are discovered in from twenty-five to thirty per cent. of all male cadavers, and he cites statistics to prove that azoospermia is more common than is generally believed and that obstruction of the vas deferens is the most frequent cause of the condition. He is now experimenting with a technic to restore by surgical measures the permeability of the vas. In case of acute inflammation of the epididymis he applies heat, using a flexible electric thermophore which fits over the suspensory, commencing with 40 C., and gradually increasing to the tolerance of the patient. He supplements this treatment with a course of brine baths as hot as they can be borne.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

109 (XXXIII, No. 19, pp. 745-784.) Treatment of Cutaneous Affections. (Hautkrankheiten.) M. Joseph.
110 *Acute Myeloid Leukemia. (Leukämie.) C. Ziegler and G. Jochmann.
111 *Investigation of Blood Pressure with Pal's Sphygmoscope. (Blutdruckuntersuchung.) A. Horner.
112 Post-influenzal Liver Abscess. (Leberabscess.) F. Karewski.
113 *Puerperal Dissecting Metritis. (Puerp. Metritis dissec.) Offergeld.
114 Ophthalmoplegic Migraine and Periodical Oculomotor Paralysis. (Ophth. Migräne und period. Oculomotoriuslähmung.) Paderstein.
115 Electricity of the Skin. (Hautelektricität.) E. Harnack.

110. **Acute Myeloid Leukemia.**—A stable boy of fifteen had septic staphylococcus hemorrhagic pericarditis, preceded by acute tonsillitis. Fourteen days after the first symptoms the blood was loaded with myeloid cells, and the clinical diagnosis of acute leukemia was confirmed by the microscopic findings in the spleen and bone marrow as well as in the blood. The lymphatic apparatus of the lymph glands and digestive tract was free from myeloid deposits, only the bronchial glands contained myeloid cells.

111. **Pal's Sphygmoscope for Study of Blood Pressure.**—The findings in regard to the blood pressure are read on a graduated scale on a horizontal capillary tube. Horner relates experiences with it in Pal's service at Vienna, and emphasizes the importance of the variations between the pulse tracings at different points. He found it an invariable law that considerable difference between the brachial and the digital blood pressure is always an index of some disturbance in the circulatory system. This difference vanishes as the condition improved under treatment.

113. **Puerperal Dissecting Metritis.**—Offergeld reports a severe case and adds that exact diagnosis is possible only with microscopic examination. Single muscle fibers and vessels and numerous cocci are found in the sheets of tissue expelled. It is remarkable that the majority of such patients are primiparæ. Perforation is the chief danger, and consequently direct irrigation and curetting of the uterus should be strictly avoided. The measures advised are vaginal antiseptic irrigation several times a day, supplemented by ergot internally to induce the uterus to contract and thus to hinder the penetration of the cocci into its walls. His patient recovered. Severe disturbances are always left by this affection which entail sterility. The entire lining of the uterus is sacrificed, and, at the best, only cicatricial tissue remains. In most cases menstruation is permanently abolished.

Münchener medizinische Wochenschrift.

116 (LIV, No. 17, pp. 817-864.) *Etiology of Rachitis. (Rachitis.) Esser.
117 Practical Importance of Reducing Power of Milk. (Reduktionsfähigkeit der Milch.) E. Brand.
118 Apparent Aërobic Growth of Anaërobic Bacteria. (Aerobes Wachstum anaerober Bakt.) H. Liefmann.
119 *Treatment of Femoral Hernia. (Kruralhernien.) J. Fabricius.
120 *Roentgen Treatment of Exophthalmic Goiter. (R.-Beh. der Basedowschen Krankheit.) E. Freund.
121 Ulcerative Membranous Laryngitis due to Vincent's Bacillus and Spirillum. (Lar. membrano-Ulcerosa fusibacillaris.) F. Reiche.
122 *Artificial Joint Ligaments of Silk. (Künstliche Gelenkbänder aus Seide.) F. Lange.
123 Blood Platelets as Producers of Alexins. (Blutplättchen als Alexinerzeuger.) D. Ottolenghi.
124 Determination of Viscosity of Blood. (Gerinnbarkeit des Blutes.) Schwab.
125 Canary Islands, Climate and Indications. (Teneriffa.) F. Peipers.

116. **Etiology of Rachitis.**—Esser ascribes the origin of rachitis to overfeeding of infants by breast or bottle. Experiments on animals have confirmed clinical experience to this effect. In both the children and animals there is increased production of leucocytes during overfeeding. The lymphoid cells and the young forms of the neutrophiles increase beyond measure, testifying to hyperleucocytosis resulting from abnormal functioning of the bone marrow. The insufficiency of the overworked bone marrow finally entails disturbances in the formation of bone, with rachitis as the outcome. Intercurrent infectious diseases only add another factor to those already at work. Prophylaxis is thus simple and easy, namely, by regulation of the diet to prevent overfeeding.

119. **Operative Treatment of Femoral Hernia.**—The principal feature of the technic described and illustrated is the suturing of Poupart's ligament to the inner margin of the horizontal ramus of the pubic bone. This obliterates the femoral canal and fastens the ligament to a firm support.

120. **Roentgen Treatment of Exophthalmic Goiter.**—Freund reviews the experiences of others in this line, citing nearly a dozen authors, and then reports five cases. The Roentgen treatment induced unmistakable benefit in all. The thyroid gland was reduced in size and as it subsided the nervous symptoms vanished with it and in two cases the systolic murmurs also. The patients all increased in weight. Two have been under observation for fifteen months without signs of recurrence. The Roentgen rays meet the causal indication by restoring normal conditions in the enlarged and morbidly secreting thyroid. They always exert a favorable influence on the nervous manifestations, while they are liable to affect favorably the heart murmurs, struma and exophthalmos. The soft, vascular tumors are the most readily influenced, and the prognosis is better the more recent the goiter. In one of his cases the patient was a young woman and the symptoms had first attracted attention about six months before. Little improvement was observed under medical treatment for a couple of months, and two Roentgen exposures were made with a week's interval, with a moderately soft tube, 20 cm. distant, the exposure lasting eight or ten minutes. The struma rapidly subsided and no murmur or tremor could then be detected. There were no ocular symptoms at any time. In another case three exposures were made in the course of a week. In another, four in less than three weeks.

122. **Artificial Silk Ligaments.**—Lange noticed that silk used to make artificial ligaments was liable to induce an abscess when sterilized by merely boiling in water. When boiled in a solution of bichlorid of mercury it induced an aseptic secretion. He has since obviated this by impregnating the silk with paraffin after boiling in the bichlorid solution. In the present article he expatiates on the advantages of the silk ligaments for paralyzed flail joints. He would restrict arthrodesis to patients over 20, who insist on it. Under other conditions he thinks that we have better means at our command. In using the silk it is important to allow sufficient time after removal of the dressings for the silk to become encased in connective tissue before the limb is used freely. It should be used enough to keep the silk ligaments stretched, but not enough to pull them out or to loosen them before they have their firm connective tissue supports. The connective tissue does not form until its formation is stimulated by gentle functional use of the silk ligaments. He describes several examples to illustrate these and other points.